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A RECORD OF ARCHITECTURE AND CONSTRUCTION.

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ARCHITECTURAL UNITY AND SPECIALISATION.

THE war has emphasised with brutal force the insistent need of unity, and now, as never before, it is realised that combination and collective power are essential to full architectural development and to the real service of the community. It must not be assumed that the value of the individual has in any way diminished; all things are accomplished through the countless efforts of single entities. But, for the time being, attention is primarily directed to the larger body corporate and to the collective energy of architects as a whole. The change of view which is taking place necessitates an almost complete re-examination of the conditions under which we live and labour. For the microscopic attention formerly concentrated upon the individual there has to be substituted a comprehensive telescopic vision of the *ensemble*.

Until comparatively modern times architecture—the one great constructive art—was the study of a single profession; now it is sub-divided into three powerful organisations—architects, civil engineers, and surveyors. So fully established are these institutions, that there is no reason to anticipate the suppression or absorption of any one or other. This sub-division—a commentary on the complexity of modern building—does not end here. It tends rather to increase than to diminish, as is evident in the further professional societies still springing into being to represent the peculiar interests of one or more departments of architectural work. We give as examples the Town Planning Institute and the Concrete Institute, where bodies composed of experts concentrate on specific aspects of the constructive arts. This specialisation, arising from concentration in a limited field of operations, responds to a desire to serve the community more efficiently. It follows a rational development, but requires co-ordination and control.

Specialists and Specialisation.

Town planning is recognised as so important a study that already Chairs have been endowed in some of the universities, and special courses in this subject have been arranged. The Concrete Institute represents a potential interest in vast structural problems closely connected with architecture. Other subjects which have attracted specialists are houses, churches, schools, libraries, public halls, hospitals, art galleries, museums—commercial, industrial and other edifices. To design any one of these entails a most comprehensive scientific knowledge, not only of the structure, but of the technical equipment to be installed therein. The many serious problems of acoustics, lighting, cubic air space, heating and ventilation involved in modern design require special definite and rigorous training, followed by wide experience and considerable practice, whilst the rules and regulations of public authorities also impose a heavy task upon those responsible for structural design. Specialists in the past have, with praiseworthy public spirit, to the great benefit of the profession, devoted much of their valuable time to the preparation of publications, in exposition and demonstration of the views and theories they have acquired after years of practice; but too often the heavy claims of business have been made the excuse for less generous actions. By closer co-operation and collective effort the value of specialisation could be vastly increased. We venture to suggest that the requisite consolidation could be effected by the co-ordination of services devised with a view to advancing the various subjects into which architecture and building seem to be naturally becoming subdivided.

Were committees composed of the leading experts convened to represent each special subject, technical investigation and scientific research could be studied and developed to the full. Further, courses of lectures and exhibitions arranged for the benefit of all interested both lay and professional, so as to illustrate the procedure and the processes involved in the various departments, would convert the headquarters of the architectural societies into centres of continuous activity and militant interest. To meet the requirements of the future, education directed by the specialists should be provided, so that close attention could be given to the various subjects. Honours courses should prove stimulating to those who wish to practise in any department to which by training and inclination they feel called.

Co-operation.

The various departmental committees formed when so required could deal with invitations for designs and scrutinize and select, in the case of competitions, the panels to participate therein. A reduction in the enormous number of entries would tend to create a more intensive study on the part of those who did compete; whilst the invidious spectacle of hordes of architects competing for some comparatively unimportant project would be minimised if not ended. Too often, alas! has the profession been regarded as the happy hunting ground for gratuitous designs. Increased efficiency and energetic business methods should improve not only the well-being of the practitioners, but the esteem with which the profession is regarded.

We see no reason why combination should end here. The time is ripe for the inauguration, promotion and development of many enterprises that would in the past have been rightly rejected as unrealizable and impracticable. The war has disclosed the painful limitations of individual power when confronting a great emergency. Since its advent a period of intense building activity has prevailed. Every conceivable department of building has been engaged—munition works, hospitals, factories, industrial and commercial edifices, institutions of all sorts have been erected; in fact, great towns have sprung into being, promoted and subsidized by the State. It might be conceived that the whole of this building work undertaken during the war might reasonably have been placed with and distributed by the existing architectural societies. That they could have carried it to a successful issue cannot be questioned, and yet few of the practitioners who before the war conducted the architectural work of the community have been directly employed.

Architecture is a profession in which individual development has been in the past a ruling characteristic. Whatever be the merit of such a system, in the self interest it engenders it has a latent defect. This weakness, no less pronounced in the aesthete than in his less imaginative fellow-being, requires to be counteracted. We have seen the profession seriously, if not entirely, neglected just when its services should have proved most valuable to the State. Does not the future of architecture and of architects call for a change in the interest for the well-being of the body corporate?

The unity of the profession and of the various services architects desire to undertake if they are to succeed demand discipline, self-sacrifice and readiness to respond. These qualities, if not inherent, must be instilled in the minds of each, until they permeate and actuate the minds of all.

We are not sanguine enough to suppose that the developments we have suggested as being needed are in themselves likely to conduce to a higher aesthetic standard, but we do believe they are essential to the architect's proper practical equipment. Although the claims being made grow in number and complexity, means must be found to bind the various departments of architecture, so that its multifarious interests can be embraced in one splendid sphere of usefulness.

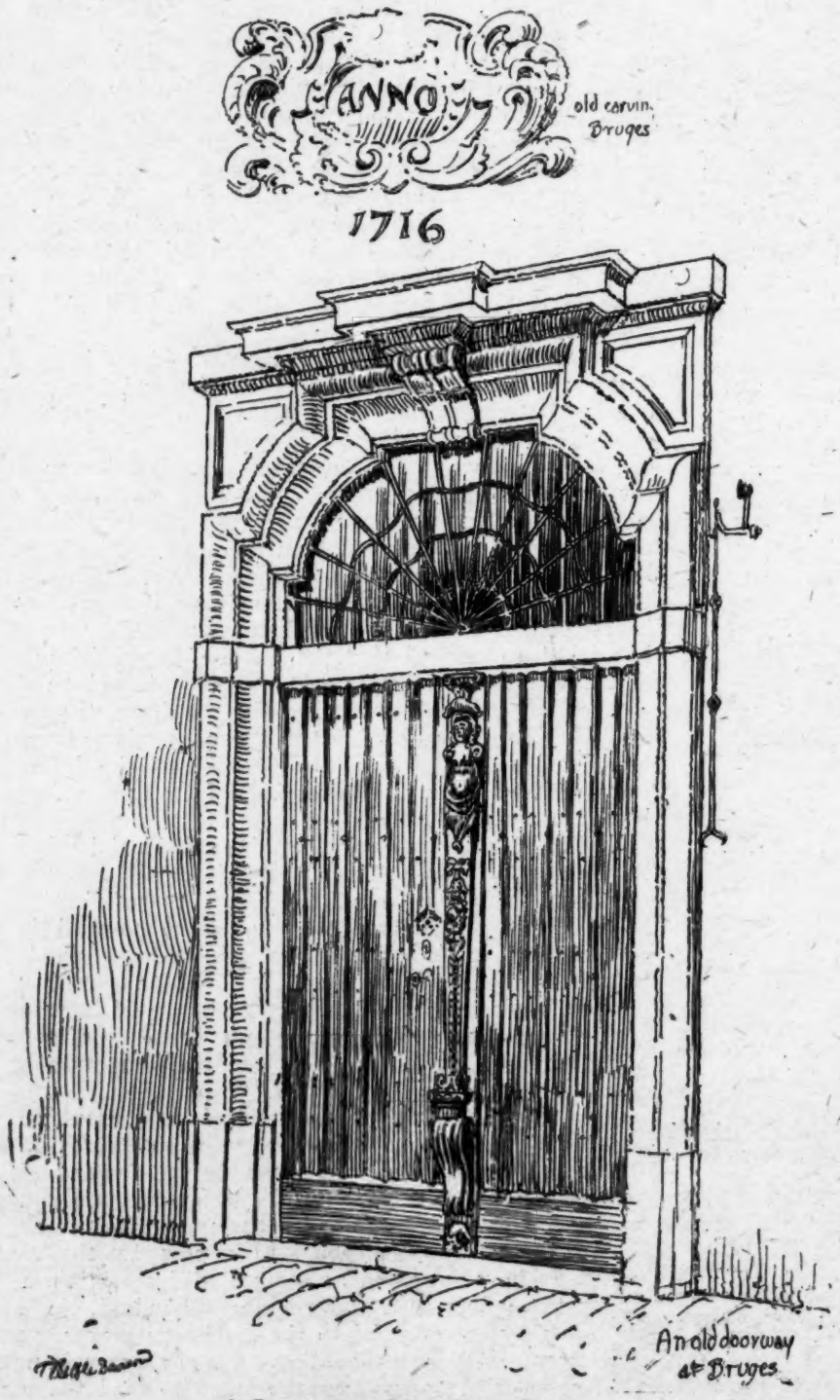
NOTES.

School of Architecture at Rome.

OUR readers will be interested to know that Captain H. Ch. Bradshaw, R.E., of Heathfield-road, Wavertree, has been awarded the "Prix de Rome" prize for architecture in connection with the British School at Rome. Captain Bradshaw won the Lever prize in competition for laying out a park at Walton Hall estate, and was appointed architect by the Corporation for carrying out the scheme. He joined the Army in the early stages of the war, was commissioned in August, 1915, served in the Somme battle, at Vimy Ridge, and Paschendaele, and afterwards went to Italy, where he distinguished himself and was awarded the Croix di Guerra.

Architects and Housing Departments.

AN appointment which was recently advertised for an architect to a housing department in one of the provincial towns, is the beginning of a movement which should be carefully watched by architects and by all those who are interested in architecture and all that it means for the welfare of the people. The line being taken by some authorities in desiring to appoint an architect for their housing department is not in consonance with the recommendations of the Committee appointed by the Ministry of Reconstruction, whose weighty conclusions we give below. For the housing which is to be carried out, it is important that the best architectural services should be obtained, and the policy of some districts working without proper architectural knowledge, and with only inexperienced guidance, is not likely to make for the public well-being.



A Renaissance Doorway at Bruges.
[This is one of the most interesting of the many characteristic old doorways in Bruges.]

Local Authorities and Architects

THE words we refer to, which are taken from the Report of the Committee on Housing appointed by the Ministry of Reconstruction, are as follows:—"It is not enough to obtain a series of good type plans; it is essential that these should be adapted to local needs by an architect of experience and taste, and that architectural skill should be employed in laying out the building estates on town-planning lines. Comparatively few architects or surveyors have experience of this work. We think, therefore, that it is very important that the work should be in charge of an architect, otherwise the high standard of design and lay-out which is desired will not be secured. But unless the Government gives encouragement, it is probable that but few Local Authorities will employ an architect; they will consider that their surveyor is quite capable of providing any professional skill which may be needed." These weighty words will, we hope, be very carefully considered by Local Authorities, though we are glad to add that some admirable housing schemes which have been finished during the war, have been carried out on the lines recommended.

The R.I.B.A. and the Allied Societies.

WE published last week the resolutions of the Joint Committee of representatives of the Allied Societies and of the R.I.B.A. with the Council's response thereto. In this, many important matters were dealt with which require careful consideration by the whole profession before the recommendations are ratified by the general body. In the matter of representation of Allied Societies, they already receive a proportion of the annual members' subscription to the R.I.B.A. as a contribution to their local funds; they also receive a direct contribution towards railway fares when attending meetings of Council, and we believe it will be generally conceded that the Council has thus already met all reasonable claims. The proposals covered by resolution 3 that "Questions of general interest . . . as far as possible be dealt with at quarterly meetings," will lead to a concentration at particular meetings of those matters which most concern the

Allied Societies, and thereafter a reduced number of attendances will be required from the representatives of the Allied Societies.

Unity and Professional Charges.

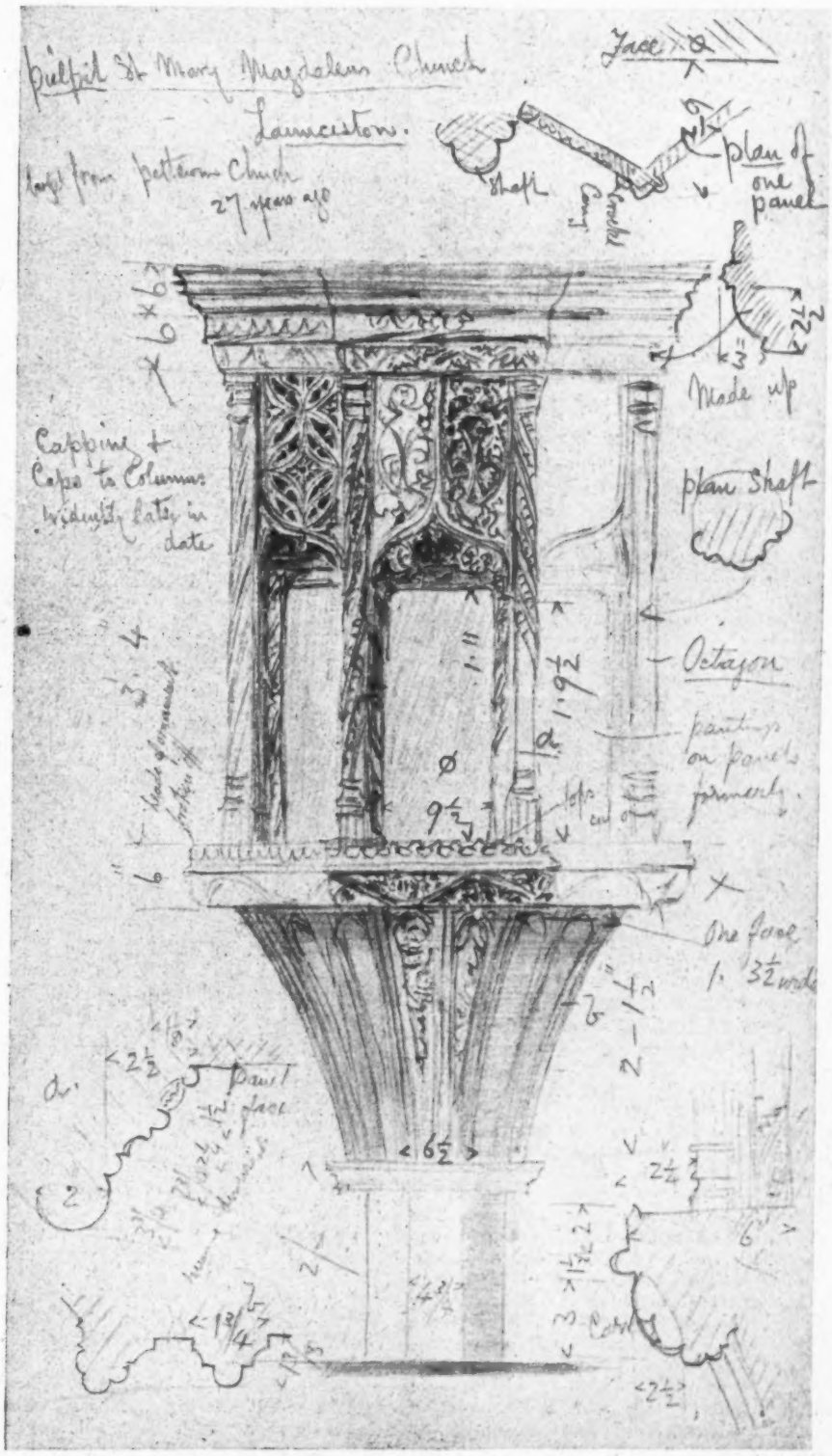
In view of the continuous growth of public Architectural Departments, resolution 5 offers small comfort to private practitioners, and action is wanted, but the whole matter is fraught with difficulty, and we admit seeing no effectual remedy but in political action. To properly apply this, it is essential not only that architects should be united, but that builders and all the accessory trades should be co-ordinated with them. Resolutions 6, 7 and 8, bearing on professional charges, have been referred to a Special Committee, whose report is awaited with interest. The matter is one of extreme urgency. We believe that many of the disabilities under which architects and assistants labour, and much of the internecine struggle and keen rivalry which exists arise from inadequate remuneration. No time could be more propitious for increasing the scale of charges than the present. The first part of resolution 9, "That it is reasonable for architects to exhibit their names in front of buildings in course of erection," we frankly consider unfortunate. Gantries and scaffolding are already monopolised by the placards of builders and the accessory trades, and if the architect's name is to appear unostentatiously in such an environment the paramount position he should maintain will certainly be prejudiced.

Thanksgiving at St. Paul's.

Reference has frequently been made in these columns to the unworthy surroundings of St. Paul's Cathedral, and more particularly to the inadequacy of the space at the west end for the purposes of State ceremonials, or for the assembly of the vast crowds that would wish to be present on such occasions. The recent attendance of the King at the solemn service of thanksgiving for the assurance of victory and peace was made with all simplicity. Space was not required for the marshalling of troops and the ceremonial display that at other times attends the presence of the Chief of the State at our national cathedral, but never did the approaches to St. Paul's seem so entirely unworthy of a great building and a great occasion. Of the thousands that lined the streets that day the vast majority would have felt themselves to be taking a more real and personal part in the service of thanksgiving had space permitted them to be present at the opening ceremony when the King was received by the clergy under the western portico, and passed into the cathedral to lay the gratitude of the nation at the foot of the altar.

Ceremony and Civic Design.

With the general spread of education and the growth of a feeling for the dignity of national life, this question of the provision for public gatherings and ceremonials will have to be taken more seriously. The lack of dignity in the recent display of popular rejoicing appears to have led to a meeting of some of those interested in pageantry and music to form a league to give expression to national idealism in all its aspects. This seems to be a movement of considerable significance to architects, and more especially, perhaps, to town planners. Some amount of ceremony, of dignity or order of life, is the basis of all architecture considered as an art. It governs the arrangement and general lay-out both of buildings and of towns. Without it there is no meaning in the symmetrical plans of public buildings or the spacious lay-out of cities. A movement for more dignity and ceremonial in our public life may perhaps be regarded as the first step towards a popular demand for a finer architectural treatment of our towns.



A Characteristic Cornish Wooden Pulpit.
DRAWN BY THE LATE D. P. FORDHAM, ARCHITECT.

GENERAL NEWS.

The Industrial Reconstruction Council.

The last of the first series of lectures arranged by the Industrial Reconstruction Council will be held in the Saddlers' Hall, Cheapside, E.C. 2, on Wednesday, December 11th. The chair will be taken at 4.30 by the Marquess of Salisbury, K.G., and a lecture on "Science and Industry" will be delivered by Sir William S. McCormick, LL.D., of the Department of Industrial and Scientific Research. Applications for tickets should be made to the Secretary, I.R.C., 2 and 4, Tudor-street, E.C. 4.

Surveyors' Institution.

On Monday, December 9, Mr. J. D. Wallis, of Messrs. Dunlop & Wallis, Member of the Council of the Institution, will open a discussion on the proposals contained in the first report of the Acquisition of Land Committee, of which Mr. Leslie Scott, K.C., M.P., was Chairman. These proposals had for their object the cheapening and simplification of the procedure for acquiring land for public and semi-public purposes. The meeting will commence at 5 p.m. In view of the public interest on the subject, non-members will be admitted on presentation of their cards. The Institution has been asked by the Director-General of Demobilisation to assist in securing the release from the Navy, Army and Air Force, of surveyors who may be looked upon as pivotal men, *i.e.*, men who, if released, would at once be engaged in preparing schemes of constructive work, such as building, road-making, drainage, afforestation, agriculture, &c., which would provide employment for other men on demobilisation.

Industrial Peace.

Mr. G. H. Roberts, Minister of Labour, presided recently at the Connaught Rooms, at the annual dinner of the Industrial League, a body which aims at improving the relations of employers and employed. He said that if internal strife were to follow the war, not only would recovery be retarded, but it might be made absolutely impossible. Indeed, it might mark the decline and fall of the British Empire. We hoped that one lesson of the war would be that both sides would resort to better methods for composing their differences. The time had now come when the efforts of the several bodies that had been formed to solve this question should be pooled and co-ordinated. There would be a special need for friendly understanding between employers and employed during the months or years of reconstruction. The individual workman had yet to recognise that while he was entitled to claim his rights he must also admit his responsibilities. Mr. John Hodge said they could not have the present standard of wage without a greatly increased production. He was satisfied that the industrial councils which were being set up for each trade would do very much to improve the relationship between the employers and the workmen, and that the result would be mutually beneficial.

A Sandhurst Memorial.

Plans for the provision of a memorial to the former Sandhurst cadets who have lost their lives in the war have now reached a sufficiently advanced stage for an appeal to be made for the funds required for the purpose. The memorial is to take the form of an enlargement of the Chapel at the Royal Military College, which already commemorates officers from Sandhurst who fell in previous wars, including 262 former cadets who lost their lives in the South African campaign. The necessary continuity will be secured in the new commemorative scheme, by which the chapel will be more than doubled in size and accommodation provided for over 700 cadets. A design for drafting the new work upon the old was submitted as a drawing at the 1918 Exhibition of the Royal Academy, and has met with general approval. It is the work of Captain Arthur Campbell Martin, F.R.I.B.A. The design for the interior decoration has been governed by the great number of names to be recorded. The problem has been met by making the memorial panels an essential part of the decorative scheme. The names will be grouped into regiments; and in the white marble panels, with regimental crests and badges emblazoned at the top of each, will be recorded the name of every single Sandhurst cadet who has fallen in this war. The piers and columns of the new building will be of marble, the domes will be adorned with mosaics, and the windows with stained glass.

Ministry of Health.

For more than forty years since the Public Health Act of 1876 came into operation, the Royal Sanitary Institute has been co-operating with the Public Health Service of the country, and has noted the steady progress made in methods and organisation both official and voluntary for improving the health of the people. At a recent meeting of the Council the progress made with regard to the Bill for the establishment of a Ministry of Health was under consideration, and the following resolution was passed:—"The health of the people being of paramount importance in the progress of the nation, the Council of the Royal Sanitary Institute have noted with great satisfaction the progress that has been made and the valuable work accomplished during the past fifty years by the various departments dealing with public health. The rapid development under present conditions of the many subsidiary factors affecting the question, and the complexity of the interests involved make it essential, for the effective continuance and development of the work, that so far as possible all matters relating to public health should be co-ordinated in one department as a Ministry of Health. The Council, therefore, desire to urge that the matter is one of pressing public importance, and trust that it may receive the early attention of His Majesty's Government."

Old Westminster Houses.

At a recent meeting of the London County Council the Improvements Committee submitted a report upon the houses in North-street and Smith-square acquired by the Council for the Westminster improvement, and stated that they were built in the early part of the eighteenth century. On each side of North-street there is an unbroken row of these old residences let for residential purposes, and adjacent houses are of the Early Georgian character and period. The twenty-five houses standing together in North-street and Smith-square form an almost unique group of property of this period in London. The Committee recommended that until the expiration of existing leases the houses, Nos. 1 to 7, Smith-square and Nos. 2 to 19, North-street, should be withdrawn from the list of sites available for letting; so that the Council would not exercise the right to determine the leases for the purpose of developments. Upon architectural, aesthetic and historical considerations, the Committee submitted representations from residents and occupiers in the parishes, from the Commissioners of Works, the London Society, and the Society for Protection of Ancient Monuments strongly urging the retention of the houses. The Local Government Committee, reporting upon the subject, advised the preservation of the houses as "an interesting link with the past." The recommendation of the Improvements Committee was adopted.

Halifax Building By-Laws.

At a recent meeting of Halifax Chamber of Commerce, Mr. Hugh Campbell moved "that the Chamber strongly disapprove of the existing building by-laws of the Halifax Corporation as being unsuitable for modern requirements and urge the Town Council to revise such by-laws with the object of encouraging the erection of new business premises in the borough; also that the Chamber appoint a deputation on the matter." He remarked that during the war the absurdities of the local by-laws had been brought to his notice so vividly that he had been seriously considering whether to advise his co-directors not to extend any further in Halifax but to remove from the district. There were walls in his works 16 in. to 18 in. thick which were safe and sound after standing twenty-seven years, but in buildings he had had erected during the war he had had to put in walls 27 in. to 30 in. thick. A competitor of his in another district had erected premises at a cost of £16,000 which covered twice the area of his own works extensions which had cost £40,000. The explanation was that his competitor was permitted to build a steel frame structure covered with wood, tar-felt, or galvanised iron. The people at the Halifax Town Hall would have had a fit if he had suggested such a building. The building by-laws of Halifax did not take into account the strides in modern industry and the newer materials for building.—Mr. J. W. S. Asquith seconded the motion.—The Mayor (Alderman Clay) said Mr. Campbell was preaching to the converted, but it was not altogether the stupidity of the Town Council which was to blame for the by-laws. Unfortunately Halifax adopted the model by-laws many years ago when ferro-concrete was not thought of. That was one of the disadvantages of Government control. A committee of local architects and builders were making recommendations to the Corporation with reference to the by-laws as they applied to dwelling-houses.—The motion was adopted.

Building in Edinburgh.

At the annual meeting of the brethren of the Guildry of Edinburgh, Dean of Guild Neil M'Leod, in his annual statement of work, stated that the total number of warrants dealt with by the Dean of Guild Court for the past year was 179, or 15 fewer than the previous year. It was again noteworthy that no new buildings of the dwelling-house kind had been "granted" during the past year. Since 1914, the number of new dwelling-house buildings amounted to only twenty houses in all. The approximate value of buildings which formed the subject of warrant by the Court for the year 1916–17 was £39,935, whilst for the year just closing the aggregate was £71,250, or an increase in the past year of £31,315. Although the building industry had been stagnant for a period the Government, with the local authorities and their officers concerned in building developments, had not been idle in preparation for the revival of building which must follow immediately upon the declaration of peace. Schemes for making up building areas had been maturing, and particularly so in that department of building which had been most noteworthy in its decline, namely, the provision of houses for the working classes. The introduction of new building materials, the alteration in character and design of house, the substitution, possibly, of brick for stone, were but illustrations of matters of a strictly practical kind which would fall to the consideration of the Dean of Guild Court of the city. What had been considered right in the past would now have to undergo the test of its adaptability to the new needs of the future. But it was not upon house-building alone that a city would best thrive, but also upon those other phases of mercantile activity and manufacturing enterprise, and by scientific teaching which would stamp the activities of a city in the cultivation both of its mental culture and its industrial output. In the post-war era Edinburgh must claim, by virtue of the activity of her merchant citizens, her share in the fostering of those works of public utility—engineering, shipbuilding, publishing, motor-building, even aviation development. By a development of the city's commerce, calling for buildings of the factory and workshop kind, the city's revenue would be enriched, her rates kept down, and employment found for the citizens within the borders of the city they inhabited.

CORRESPONDENCE.

Architects Demobilisation Committee.

SIR,—All communications relating to the demobilisation of architects should be addressed to the above Committee at 35, Bedford-square, and not, as stated in the Government notice, to the Architectural Association. The Demobilisation Committee is a Sub-Committee of the Architects' War Committee, which for its own convenience and by courtesy of the bodies concerned, uses for different purposes the premises of the Institute, the Architectural Association and the Society of Architects.

HENRY M. FLETCHER,
Chairman.

A National Memorial and the Housing Prob em.

SIR,—It may be assumed that the new Par iament will take an early opportunity of considering what form a national memorial should take, to honour not only those who have fallen, but also those who have taken part in the great struggle of Right against Might.

May I venture to bring before your readers a scheme which may be thought worthy of some consideration. It seems to be generally agreed that the Memorial should be of a practical as well as of a monumental character, and this practical form cannot, I think, be better shown than by taking a wide and generous view of a question now before the public, namely, the housing problem. The fact that it is necessary to provide at once 300,000 houses for the accommodation of the working classes, shows how inadequately they were housed before the war, and proves that the nation must take immediate steps to rectify this deplorable state of affairs. While the majority of the houses are doubtless needed for country districts, the fact remains that the slums in London are a disgrace to the community and must be abolished and decent residences for the working-classes take their place. The doing of this would be a practical side of the memorial project.

I venture to suggest that the area covered by Charing Cross Hotel and railway station, together with Villiers-street and perhaps Buckingham-street, would form a site for a national memorial worthy of the nation and the cause. It would, of course, be necessary to remove the railway station to the south side of the river. This would give the opportunity of erecting a much-needed bridge. It will be remembered that when the station roof collapsed in 1906, many proposals were made to this effect. I made myself a proposal in my opening address as President of the Royal Institute of British Architects, which was illustrated in a weekly paper. The railway company, however, objected, chiefly on the grounds that their suburban traffic would suffer. This could now be obviated by continuing the tube railway from Aldwych to Charing Cross, and thence to the south side of the river.

A new bridge (why not St. George's Bridge?) should, of course, form a distinctive feature of the memorial, and the southern end of the bridge might have a distinctive feature in the form of a memorial as a tribute to all our Allies.

But, however magnificent a form be given to the memorial, I see no reason why it should not be combined with projects of a utilitarian nature, and I venture to think no project can be more worthy of consideration than the housing scheme to which I have referred above.

On the south side of the river is a crowded district, composed mainly of small unhealthy houses, homes of the working classes; and nowhere is it worse than by the river side. There could be no better point of beginning a housing scheme than here. I would suggest that the Government should acquire a strip of property, say, from the site of the London County Hall now in course of erection as far east as Southwark Bridge to a depth of 300 or 400 yards on which a beginning of a great housing scheme could commence, a housing scheme not only for those who could pay a rental of £25 per annum for a flat, but also for those who could afford a higher rent, extending perhaps to £100 per annum. There might also be space allotted for buildings other than residences, such as a Shakespeare National Theatre, the London University, together with students' quarters, &c., &c. The residences for the working classes would, of course, come under the Government proposals in their housing scheme. With a structure of a grand monumental character emphasising the entrance to the bridge, a similar emphasis on the southern side, with an embankment to St. Paul's Bridge I think it possible that a great monument of the great war could be consummated.

May I venture to further trespass upon your space by re-opening the question of a barrage across the Thames for the keeping up of the upper waters of the river with the purpose of rendering it more easy for traffic and for pleasure purposes? This question was fully discussed at meetings taking place in the rooms of the Institute of Civil Engineers in 1906.

Before old London Bridge was demolished it in itself acted to a great extent as a barrage. The piers took up a much larger space than the arches, thus forming at the ebb tide an impediment in the nature of a weir, somewhat similar to those necessary for an ordinary lock. So rapid was the ebbing flow of water that it was only experienced watermen who could shoot the rapids. The consequence was that there was very much less rise and fall of water above London Bridge than below it, and this was an especial benefit to those who used the river for business or pleasure purposes. Pepys mentions more than once of taking a "pair of oars' to proceed to some business appointment. He does not seem to have thought it necessary to enquire as to the state of the tide. This would be necessary now (as I found from experience gained many years ago when I frequently rowed on the river, starting from Essex stairs).

Instead of a fall and rise of 17 to 19 feet each tide, this could be reduced by means of a barrage to 8 or 9 feet, and the river once more become a pleasure resort. The proposed building of St. Paul's Bridge may be begun in the near future, but it should not be too late to alter the design so that it should also form a barrage—say with three arches, each one forming a lock—the weir and backwater being provided for on the south side. The bridge could also be made wide enough to allow of covered ways and shops on each side. An arrangement of this kind would make Southwark once more as an integral part of the City of London, an advantage not gained to the same extent by an open bridge.

In considering the probable cost of the scheme I have sketched, it should be borne in mind that the City will bear the cost of building St. Paul's Bridge, the L.C.C. should bear the cost of the Charing Cross Bridge, and the nation would provide for the monumental work and the housing probem.

With an embankment and a barrage as suggested, the river would become vastly more suitab e both for traffic and for pleasure boating. In the latter connection boating clubs might be founded, and the working man, housed on the south embankment, would probably institute his own boating and swimming clubs, &c., thus taking, as his rightful due, as far as the pleasures of the river are concerned, his "place in the sun."

THOS. E. COLLCUTT,
Past President of the Royal Institute of British Architects.

An Eight Hours Day.

SIR,—I respectfully beg to draw your attention to the enclosed article from the *Daily Express* of November 22, on the eight-hour day. In support of this, as affecting the building trade and the 1½ hours before breakfast, I venture to append a few remarks.

During twenty years in London of close observations of working conditions (durin summer months), both as journeyman and supervisor, it has often struck me what a large amount of time is wasted by having two breaks in the working day for meals. I believe that I am right in saying 90 per cent. of building employees have a journey of at least one hour's duration from their residence to their place of employment. This means, under present working-hour rules, that a man must rise about 5 a.m.; he arrives on the works at 6.30 a.m. and if the works are extensive he is probably in position to commence work at 6.45 a.m. It must be borne in mind that, in the majority of cases, a man commences work on an empty stomach, and naturally he is anxious for his breakfast. His inclination is to cease his actual production of labour at 7.45, in order to be ready to enter the mess room when the whistle is blown at 8 o'clock. I have never noticed the individual leave the mess room at 8.30 with the same alacrity to resume work, and the larger the contract the more time is taken up in the resumption of work, as the general mess room may be some distance from some parts of the works in progress. Possibly the same conditions prevail when the dinner hour strikes, but in a lesser degree.

Another point of view in support of the eight o'clock start and the eight-hour day is that the individual would not be compelled to rise so early; he would be enabled, in the majority of cases, to enjoy his breakfast with his wife and family, and arrive at his employment in a more contented frame of mind, thereby the value of his output per hour tends to increase for himself and his employer. I sincerely hope that the eight-hour day will soon be universally adopted in the building trade.

S. H. ALABASTER,
Building Works Manager.

[*** From the article referred to we take the following:—"The miners already have a statutory eight hours day. Why not a universal eight hours day? Why not two shifts where now there is only one, and why not three shifts where now there are two? In this way employment would be multiplied and production increased. It can be done if the Government adds an Eight Hours Day Bill to its programme."—ED.]

Empire War Memorial.

SIR,—An unusual feature of the most recent proposal for a war memorial on a large scale, was that there was associated with it an Advisory Committee composed of leading representatives of almost every profession and calling except that of architecture.

By whom or for what purpose this Advisory Committee was constituted did not appear, and while it may be very advisable that there should be an Advisory Committee to deal with war memorials, involving questions of architectural composition and design, it seems to be desirable that any such committee should be constituted by the professional societies connected with architecture, and should consist largely, if not entirely, of architects.

C. MCARTHUR BUTLER,
Secretary, Society of Architects.

[*** We quite agree with our correspondent.—ED.]

Lancaster War Memorial.

The Mayor of Lancaster (Mr. W. Briggs) presided at a public meeting called to consider the provision of a permanent war memorial. Mr. T. H. Mawson and others, spoke on the scheme, which takes the form of providing a settlement for disabled Service men on the Westfield estate, with the object of assuring to these men a home and employment on their return to civil life. The plans and drawings already arranged, provide for cottages, residences, and gardens for married men, hostels for single men, workshops and studies for craftsmen, club, and other recreational facilities.

THE LAW RELATING TO LIGHT.

AN ordinary meeting of the Institute was held on Monday, at the offices, No. 9, Conduit-street, Regent-street. Mr. H. T. Hare, the President, in the chair.

Following the transaction of formal business, the President proposed a resolution authorising the Council to take such steps as might be possible to secure the passing of an Act to amend the law relating to the acquisition of light. He said that few architects progressed very far in their practice before they were tripped up by our extraordinary law relating to the access of light and air to buildings. To those of them whose work lay chiefly in London or in large provincial towns, it was a constant bugbear, hampering their designs and restricting the proper development of their plans, and leading, in a large number of cases, to the mutilation and disfigurement of many fine buildings. In a very considerable proportion of cases the objection taken by the dominant owner was not really justifiable, if viewed from the ordinary standpoint of common sense, and many actions which caused endless trouble and expense were in reality entirely frivolous and speculative. The English law, as it stood to-day, was apparently based on the presumption that because a man had enjoyed some benefit to which he had no right, and for which he had given no consideration, for a period of years, he, *pro facto*, became entitled to the right in perpetuity. The onus of preventing the acquisition of such right rested upon the unfortunate victim who was in process of being robbed. To the non-legal mind that appeared to be an entirely unreasonable position of affairs. The vague and indeterminate nature of the law was, to some extent, regularised by the Prescription Act in 1832, which provided that the necessary lapse of time should be fixed at twenty years; but it did not define in any way what should be the nature or extent of the injury proposed which should justify preventive action. That was left to be settled by the endless procession of cases, and the law, at the present moment was almost entirely made up of what was known as "case law"—the rulings of judges from time to time; some good and some bad. The only really valuable judgment which had helped matters was that in Colls *v.* Howard, in which it was laid down that the damage must be "material"—a word that was indefinite and subject to much variety of interpretation. He did not think there was any division of opinion amongst those who understood the matter that the existing state of the law was unsatisfactory, and should be amended. It was to the public disadvantage, and prevented the proper development of their cities and towns; and, moreover, that was the only country on earth, so far as he knew, where such a ridiculous system prevailed. The system was confined to England and Wales, the more logical and sensible mind of their Scotch brothers would have none of it. Attempts had been made several times by the Institute to tackle the question seriously. Committees had sat in conjunction with other bodies, and had considered and reported, recommending action to be taken to amend the law; but for one reason or another nothing effective had been done. He thought the principal difficulty in the way had probably been the practical impossibility and the expense of promoting a private Bill in Parliament. They had just passed through the greatest war in all history and during that period of time they had had the opportunity of considering many things, and considering whether they could improve their position when peace returned. Amongst other things, consideration had been given to various defects in their laws, which led to useless and avoidable litigation, and he was told that amendments had been drawn up which it was proposed to put forward as soon as possible for the consideration of the Lord Chancellor, and that many of them were likely to be adopted as Government Bills. The proposed Bill which was now before them fell within that category, and there appeared to be a distinct prospect of its being dealt with in that way. The object which had been borne in mind in drafting the Bill was to secure that the owner of a building site should be at liberty to develop such site to the full extent of its capacity within the limits of the Building Acts and by-laws, and subject to no disability imposed by his neighbours, without agreement and consideration received. The terms of the draft were as follows:—

Acquisition of Light (Restriction) Bill, 1918.

AN ACT to amend the Law Relating to the ACQUISITION OF LIGHT.

I.—(1) After the commencement of this Act a right to the access and use of light to or for any building shall not be acquired by the mere enjoyment thereof for any period of time, and no presumption of a grant of a right to the access and use of light shall after such commencement arise by reason only of the enjoyment of such access and use for any period.

(2) This section shall not apply to any right to the access and use of light which shall have become absolute and indefeasible before the commencement of this Act, or to any inchoate right to the access and use of light which shall have been acquired by the actual enjoyment thereof for the full period of twenty years before the commencement of this Act without interruption, and accordingly every such inchoate right shall be capable of becoming absolute and indefeasible in the same way as if this Act had not been passed.

II.—(1) Section 3 of the Prescription Act, 1832, is hereby repealed, but this repeal shall not revive any custom referred to in that section.

(2) Nothing in this Act shall operate to bring any right to the access and use of light to or for any building within the provisions of Section A of the said Act of 1832.

III.—This Act shall not apply to Scotland or Ireland.

IV.—(1) This Act may be cited as The Acquisition of Light (Restriction) Act, 1918.

(2) This Act shall come into operation on the first day of January, One thousand nine hundred and nineteen.

They would note that the Bill secured that no rights of light should be acquired after the passing of the Act. It was not retrospective and did not interfere in any way with rights already acquired, but it did affect all buildings erected within twenty years; that was a building erected nineteen years ago could not acquire an indefeasible right at the end of another year. At first sight that might appear to be not quite just, as it would seem that a large portion of the prescribed period having elapsed, a right had been partially acquired. That was not, however, in fact the case, for on the last day of the twenty years no more actual right existed than on the first day, and the adjoining owner would have a perfect right to block any lights even at the last moment. The law was therefore only proposing to do what a private individual would have a right to do. He would have liked to extend the scope of the Bill so as to deal with existing rights by the establishment of a technical tribunal, thus disposing of vexatious and frivolous claims and avoiding much unnecessary litigation. They were, however, advised to confine the present Bill to the simple proposition expressed in it, and to leave the question of existing rights for future consideration. He thought they would agree that if they secured the passing of that Bill, they would have made an important advance in the direction of simplifying the architect's work and promoting the interests of architecture. They had asked several societies to give their opinion upon the Bill. They had not got all the replies yet, but so far they were nearly all favourable. The Institute of Arbitrators stated that they were in favour of it. The Institute of Builders approved the Bill by a large majority, and the National Federation of Building Trades Employers also approved it. The Society of Architects stated that they were of opinion that the matter was one for consideration by a joint committee of two bodies, but that was impossible, as the Bill must be approved by the Institute before the end of the year. Everyone that he (Mr. Hare) had spoken to about the matter agreed that the present law had been a nuisance to them all the time they had been in practice, and that if they could only get it amended as they suggested, it would be a great advantage to the profession.

Mr. Walter Cave seconded the resolution and remarked that he thought they ought to thank the President for the trouble he had taken in the matter.

Mr. Gilbert Scott remarked that the Bill did not touch the question of grant. It might be that a man would build on a plot and twenty years later his neighbour would want to build but would not be able to because his neighbour would claim his ancient rights.

The President said that such a case could only arise where the vendor was owning the adjoining land. He thought it was better to leave any question of grants out of the Bill altogether.

Mr. Bernard Dicksee said he agreed with the President, and if they put in a clause that no man should make a grant, he was afraid they would kill the Bill.

Mr. W. Henry White said he believed the Bill would meet with great opposition from vested interests. He referred to a case where money had been laid out in acquiring property on the assumption of a continuance of existing law.

The President said that in every case where a building had been put up within twenty years they were liable to be blocked to-day. All they proposed to do in the Bill was to reiterate that right, and prevent a perpetual right being acquired.

Mr. Francis Hooper said he cordially supported the Bill if only for the reason that it would deal with such a case as Mr. White had referred to. The matter was a very vital one and he congratulated the Council upon the energetic way in which they had dealt with it.

Replying to Mr. Percival Frazer, the President said it was not the intention of the Council to go to the expense of promoting a private Bill. As he had told them, there was a distinct prospect of the measure being adopted as a Government Bill.

Mr. Delissa Joseph said he regretted that the matter had to be decided that night, for he thought it required more consideration than had been given it. Notwithstanding the admitted disadvantages of the present law, the fact remained that it did secure some measure of amenity between neighbour and neighbour. He did not think it desirable to deal with the matter unless the Council asked for the setting up of a Court of Referees, somewhat similar to that which existed in Scotland, to deal with existing rights. He proposed that the Bill be referred back to the Council for further consideration.

Mr. Sadgrove formally seconded the amendment.

The President said he did not think Mr. Joseph understood that the idea at the back of the Bill was that every man must so build his property that he acquired all the light he wanted either from his property or from the public street—he must not do anything in building his own property which would prevent his neighbour from developing his land to the full extent. With regard to the establishment

of a tribunal to deal with existing rights, the Council had that in their minds, but they were advised that a proposition of that sort would be a very contentious kind of measure, and that to introduce it into the Bill would probably prevent its being accepted by the Government. The question of existing rights was a matter that would have to be dealt with by a separate Bill. He quite agreed with the desirability of having a tribunal, possible on the lines of the Dean of Guild Court in Scotland, but it could not be done in that Bill.

After some further discussion, Mr. Joseph withdrew his amendment, and the resolution approving the Bill was carried unanimously.

At the opening of the meeting the President mentioned that the Council had appointed a committee to consider the question of a memorial to the members of the Institute who had fallen in the war and he hoped soon to be in a position to make an announcement on the subject.

Architects' Fees for Housing Schemes Sanctioned by the Institute.

In fixing the Scale of Charges for the Development of Land, or for Housing Schemes, special arrangement will usually be required according to circumstances, but for ordinary cases the following are the charges :—

(*a*) HOUSING SCHEMES AND LAYING-OUT ESTATES.

For the preparation of a plan or scheme from existing maps, showing roads, building plots, and buildings in block, and including conferences with officials of local authorities, but not including surveying, levelling, contouring, or the preparation of detailed plans of buildings, the remuneration is as follows :—

	Per acre.
For the first 25 acres	£2 2 0
On the next 275 acres	1 1 0
On the remainder	0 5 0

Minimum charge, 25 guineas.

(*b*) ROADS AND SEWERS.

For preparing working drawings and specification of roads and sewers, obtaining tenders and advising on the same and in the preparation of contract, furnishing to the contractor one copy of the drawings and specification, general supervision as before defined, issuing certificates, and passing and certifying the accounts, the charge is 5 per cent. upon the cost of the works. Should the works not proceed after the preparation of the drawings and specification, the charge is 3 per cent. upon the estimated cost.

(*c*) BUILDINGS IN HOUSING SCHEMES.

In housing schemes the charge is 5 per cent. on the first 12 houses, 2½ per cent. on the next 60, 1½ per cent. upon the remainder. This percentage covers the ordinary variations in type of house and such minor modifications as are made to avoid monotony in appearance.

When the Local Authority assumes responsibility for the supervision and carrying out of the work, the above fees may be reduced by one-third.

This scale is not necessarily applicable if the carrying out of the work is effected in instalments and consequently deferred over a long period of years.

Housing Competition, Leicester.

The result of this competition was as follows :—(1) Mr. A. J. Wood, A.R.I.B.A., "Prestwold," Westfield-road Leicester; (2) Pick, Everard & Keay, 6, Millstone-lane, Leicester; (3) Messrs. S. Harrison & Sons, 7, St. Martin's East, Leicester. The assessor was Professor Adshead.

Looted Pastels Recovered.

The famous Quentin de la Tour pastels, which the Germans had carried away from St. Quentin, have, it is stated, been recovered at Maubeuge. They are intact, and will probably be exhibited in Paris before they are returned to St. Quentin.

THE BILL TO AMEND THE LAW OF LIGHT.

A CORRESPONDENT has sent us the following observations on the Bill which, at the time the communication was written, was to be discussed at the meeting on Monday of the Royal Institute of British Architects :—

The Bill of which the text is given in the *Builder*, November 29, which is to be entitled "The Acquisition of Light (Restriction) Act," raises some very important questions which should receive careful attention before the Bill becomes law.

The Bill as drafted appears to abolish in the future the acquisition by prescriptive enjoyment of any right to light, and therefore such a right after the proposed Act has come into force will only be obtained by express grant or agreement. The discussion which this measure will be sure to receive at the forthcoming meeting of the Institute will be read with interest, and possibly may cause some alteration or modification of the proposed Bill, but without the light thrown upon it by this forthcoming discussion perhaps one or two observations may not be out of place.

It cannot be denied that the law of light was in a confused condition, and that some clear pronouncement of the law was called for by Statute, but is what appears to be a total abolition of prescriptive right to light a wise or desirable method of approaching this question? At the present time great consideration is being given to the subject of health, and better conditions of housing, and light has a very important bearing on this question, especially in areas where any process of reconstruction is of a partial nature and many of the existing buildings are to be left untouched.

It must be remembered that since the decision of the House of Lords in Coll *v.* Home and Colonial Stores, Ltd. (1914 A.C. 179) the law has been modified as the interference with the right to light to be actionable must be such as to amount to a nuisance, and it surely may be asked is this an unreasonable security to offer the owner of house property after a lapse of twenty or more years, or is it more reasonable to leave him entirely unprotected so that that valuable asset light may be diminished, without remedy, to such an extent that an actual nuisance is suffered?

There are many decisions which still appear in the text-books which are based on the law before this decision in the House of Lords when a less degree of interference was considered to be actionable and when an arbitrary test was applied to ascertain whether the interference was actionable or not. No one would wish to be so reactionary as to revert to such a state of things. There have also been cases since the decision in Colls case where attempts have been made to widen the principle laid down by the House of Lords, and claims have been made for special quantities of light in particular trades or businesses, but the law now is that a diminution of light amounting to actual nuisance must be shown. Lord Davey stated the degree of light as follows :—"I am of opinion that the owner or occupier of the dominant tenement is entitled to the uninterrupted access through his ancient windows of a quantity of light, the measure of which is what is required for the ordinary purposes of inhabitancy or business of the tenement according to the ordinary notions of mankind, and that the question *for what purpose he has thought fit to use that light* or the mode in which he finds it convenient to arrange the internal structure of his tenement does not affect the question."

When it is apprehended that nothing short of an actual nuisance will enable an action now to be brought for obstruction to the prescriptive right to light, can it be intended to take away all protection from such an invasion of a private right? Light is the breath of life, and some protection should surely be given that a nuisance shall not be committed by anyone in connection with the amount of light essential to ordinary healthy habitation of houses or other premises.

Legislation may even now be required to define more accurately what is meant by the term nuisance; legislation may be required to limit or direct the method or period by which the right can be acquired, but surely it cannot be intended to abolish all right to light in any degree? If that is the intention of this proposed measure, it surely is retrograde in its operation, and it will tend to diminish the amenities and health of our towns. If this prescriptive right in any degree is not to be recognised, some other form of protection will soon be found to be necessary. In new areas it is possible building restrictions may be relied upon and the requisite amount of light and air thus be secured, but in existing areas, even if building restrictions could be relied upon, would they not prove more restrictive and uncertain than the present law? The Repton School case appears to answer this question in the affirmative. The law of prescription based on the question of nuisance is uniform yet elastic, it can be applied with equity not only in every district but to every house in that district; but building restrictions are not uniform, they vary all over the country, and they are not applicable to each individual case.

The discussion on this measure by the Institute will be extremely interesting, but it is to be hoped that it will be remembered that any uncertainty in the right to light will also tend to diminish the value of house property.

Architectural Association of Ireland.

At a meeting at South Frederick-lane, Dublin an interesting illustrated lecture on "Columns" was delivered by Mr. Oswald Reeves. He described the columns development by the ancient Egyptians, remarking that it was regrettable that an intelligent interpretation of Egyptian art had yet to be undertaken. Mr. M. J. Burke (president), who was in the chair, announced that to signalise their relief from the nightmare of the war the Committee had decided to hold a dinner and a smoking concert

House, Ealing.

MR. ROBERT ATKINSON AND THE LATE CAPTAIN G. L. ALEXANDER, ARCHITECTS.

THE REBUILDING OF SALONIKA.

ON Friday, November 22, in the great hall of King's College, Strand, Mr. Thomas H. Mawson delivered an illustrated lantern lecture on "The Rebuilding of Salonika." M. Caclamanos (the new Greek Minister) presided over a large gathering.

Mr. Mawson remarked that quite apart from the necessities created by the great fire, the rebuilding of Salonika was quite a logical proposition, because it would pay to rebuild the city on economic and æsthetically beautiful lines, and that could only be assured if whole sections were built to a well co-ordinated and connected plan. As rebuilt, the new Salonika would become one of the most important cities in the Orient, and express in its architecture the qualities of permanence and stability which should characterize every great city. There was he said, every reason for this, because Salonika was more than the chief city of Macedonia—it was the natural gateway to the Balkan States, and it was said by some that at the peace negotiations Serbia would ask for and probably obtain a free port near the city. All those factors would ensure a rapid growth in the population, which at the present time was 220,000, but which in twenty years might be over half a million. The climate was perfectly delightful for eight months in the year, but during the remaining four months malaria was prevalent. However, with the drainage and proper irrigation of the Verdar, Mickra, Langaza, Struma and Dorian marshes, this scourge should rapidly disappear. Indeed, conditions in that respect were already greatly improved. During its good seasons Salonika would surely attract many visitors and tourists, for it would be one of the most beautiful seaports in the world—a city in which parks, gardens and boulevards would provide ample shade and recreational spaces; a city in which intellectual pursuits would become a pastime and in which opera and good music would flourish. To the historian and artist the city would possess great attractions, for every archæological treasure would be preserved and in it the new architecture, though following local tradition, would equal in design and beauty the best modern work in any European city. So much M. Venezelos was determined, that he (Mr. Mawson) and those associated with him in the work should realize In the business and residental quarters, there would be good and well conducted schools and a well-placed and well-equipped university, a great opera and theatre, a permanent exhibition ground and a unique sporting arena, with a yachting centre at Mickra point, now the site of our British base hospitals.

Proceeding to refer in detail to the plans which the Commission had decided upon for rebuilding Salonika, Mr. Mawson said that the ancient thoroughfare Rue Equatius would be the main central longitudinal boulevard intersecting the city. It would be straight from end to end, having a width of 120 ft. At the Porte Varda end would be placed the great union terminal railway station, with an electric underground railway connecting the stations with another railway terminal at Kalemaria, or the east end of the city. From this station a new railway would eventually run to the Gulf of Orphano. The width of Rue Equatius permitted of a central boulevard of trees with tram-lines on either side, then two lines of vehicular traffic and wide, tree-planted side-walks. Above and below this main axis there would be three other longitudinal axes, or seven in all; two of them including Rue St. Demetre and the Quay. It would seem therefore that the flow of traffic from east to west was well provided for. The main cross axis started at the Quay and extended to the Minaret of St. Demetre. That was the main cross artery of the city and would be 150 ft. in width and be planted with four lines of shade trees and have in addition a central parkway. On either side of the boulevard and north of Rue Equatius there would be erected in large open spaces the new City Hall and the Law Courts, which, together with the new St. Demetre as a terminal feature, should make a very fine architectural composition. Rue Venezelos, which was so well known to British soldiers and nurses, would be widened and paralleled by another road of equal width and importance to the west. At the base of those two roads, near its junction with the Quay, the central block between those two parallels was carried back, thus forming a square, to be called Liberty Square. Here would be erected the great Post Office and some of the principal banks. Many other cross arteries were planned and those and the longitudinal roads were intersected by great radial roads, thus ensuring the free flow of traffic in all directions. The great Quay was to be widened by about 40 ft. and divided into lower and upper boulevards, the latter about 4 ft. above its present level, and from the Quay all shipping would eventually be banished. The docks were to be developed westwards and the White Tower district developed as the great social centre for the city. There would be built the new opera house and theatre and the great city cafés. The east end of the city would become increasingly the residential quarters for the official, professional and merchant classes, and Mikra Point the chief residential area and the seaside resort for the citizens of Salonika. There also would be developed the bathing and recreational centre, with a great yacht club as part of the scheme. Within the central part of the city there would be many beautiful town gardens. One of those would extend from the Cathedral of St. Sophie to Rue Venezelos, and forward to the proposed French cathedral at the end of Rue France. One great feature of the city would be the new bazaars, which were to follow the best tradition of Byzantine architecture and planned in large groups on a system which would prove a great convenience both to sellers and buyers. That work was in the hands of his French colleague, M. Hebrard. After so terrible a disaster as the great fire, the lecturer said he was sure it would not surprise his audience to hear that the question of fire control had received most careful consideration. To that end the park belt, which extended from sea to sea starting at the White Tower and extending behind the citadel and returning by Porte Varda to the docks, divided the city into three distinct zones. Then it was proposed to erect seven fire stations in the best control areas and to lay down a complete system of fire alarms and visible hydrants.

Mr. Mawson then proceeded to show a number of excellent maps and slides on the screen illustrating the strategic position of Saloni a, with views of the great fire and the ruin which came in its train. He also illustrated some of the conditions with which he and his colleagues had to deal, and finally he showed a map plan of the city as it is to be laid out.

M. Venezelos proposed a vote of thanks to Mr. Mawson for his lecture, and remarked that he wished to tender that gentleman his own personal thanks and the thanks of the Greek Government for the great interest he had shown in the work of planning the rebuilding of the ancient and historic city of Salonika.

M. Gennadius (late Greek Minister), in seconding the resolution—which was carried with enthusiasm—said he had had the honour of knowing Mr. Mawson for many years. They were most happy that the rebuilding of Salonika was to be carried out both by English, French and Greek talent together—a fact which was symbolical of the new conditions of the world, especially in Greece and the East generally.

Westminster Abbey Monuments.

The authorities of Westminster Abbey took the precautions to preserve as far as possible most of the more valuable monuments in the Abbey from the dangers of enemy aircraft, and the Coronation Chair and many of the effigies were removed to the crypt, other monuments being protected by sandbags. These are now being removed, and the Coronation Chair now occupies its ancient position facing the tomb of Edward the Confessor.

BOOKS.

Thomas Settles Down. By H. B. CRESWELL. (London: Nisbet & Co., Ltd. Price 6s. net).

READERS of "Thomas," Mr. H. B. Creswell's first book, will be glad and interested to know that Thomas settles down. They will not be surprised that his married life was full of incidents, including the building of a house. It is the building of the house that gives the work its special interest to architects and builders, for though it will appeal to the general public as a story well told—full of amusing incident and fun—it will make a special appeal to architects and builders, as a considerable part of the work revolves round the building of the house. In fact, so much is made of this event and so well is the whole affair told, that we venture to think that in the course of a very few months, there will be few architects who have not read the author's many interesting views and the experiences Thomas had with his two architects and all those concerned. The characters of the two architects are portrayed at some length—and while it is to be hoped that one is an exaggeration and is far from representative, the other we believe to be a type of many practising architects; at least we hope so, otherwise, if the character of "Double Benson," the first architect, is approximately representative, then the public have often a good deal to contend with in their relations with members of the profession. When Thomas explains to "Double Benson"—"a coming man," who tries to disguise a tense and nervous manner by speaking in an extremely "refaned" and "leedy-lake" manner—the kind of house he wants, he is told that the sort of building he *ought* to have is a "Pseudo-neo-Grec." house. The dialogue which follows, in which the client asks for a verandah, bay windows, carved barge boards, &c. (and in the course of which he is told that he does not really like these, but only thinks he does), is very entertaining; and, in a subsequent and final interview, after the plans have been sent in and condemned by the client, we read: "I came to you," I say to him, "to get the advice of an expert; I said what my requirements were and I supposed that, as an 'expert,' you would give architectural expression, or whatever you call it, to my ideas. I don't care—to be perfectly frank—a tinker's cuss about any artistic conceptions which ignore my needs. I want a house to fit me, and if your skill does not enable you to do this and at the same time give me a pretty house, it seems to me that your skill does not carry you far, Mr. Benson." "You are very frank, Mr. Quinn," says Friba, who is bumping backwards and forwards and staring at the opposite wall with an air of martyrdom. "I am," I agree. "I have wasted two months, and as a consequence shall probably find myself without a roof over my head in a year's time; and if a little frankness can help me, I intend that it shall. I told you I was prepared to spend five thousand pounds, and you occupy seven weeks designing a house which you tell me may cost eleven thousand. In order to build up your reputation—the nature of which I cannot conceive—you have fitted me out with a kitchen which can only succeed as a Turkish bath; back stairs which will be used from sheer necessity as a larder; and an upper floor in which everything has been sacrificed to provide a hide-and-seek playground for the children. You have shown no fly gauze even to the back stairs; there are no scrapers to the entrances; nor are Brodie's self-cleansing lavatory basins in any way indicated. In addition, the distance between the kitchen and the dining-room is such that I should have to scour England for a parlour-maid with the muscles of a tight-rope dancer. I have figured it out and on the modest basis of thirty journeys a day, I find that this young woman must be prepared to leg it to the extent of three hundred unnecessary miles a year; assistant housemaid say, two hundred more. In fact, long before

the house falls down, your conception will have called for 100,000 miles of gratuitous quick march. It's poor sport, Mr. Benson, dancing to the tune of 'Pseudo-neo-Grec' for years on end when you have to pay the piper."

We must add one of the architect's concluding remarks, which may or may not express the truth. "It is generally found," he says, "that gentlemen come to us with the idea that they can build a larger house than they require for a less sum than they are ultimately willing to spend. The usual process is that *we* reduce the cost, and *they* meet us by increasing the expenditure."

The ideal architect is met in the person of a Mr. Large, who is engaged because of a pleasing laugh and manner, and who practically does what he likes, and gives his client complete satisfaction. In the course of the book, the author expresses so much common sense, that we might quote very many pages, but that would hardly be fair. However, we shall be excused if we give the following observations of Mr. Large, who has been shown the account of Mr. Double Benson for £133 16s. 9d. "for services rendered," and which the client intends to repudiate: "We don't like going to law; it's always a bad advertisement, as some people who trade on it know well. Yes, the judges are down on architects. You see, they can't understand us; architecture is a quality only, and they can't reason it, or nail it down, so they get impatient about it. They can't distinguish it from building. A judge's idea of good architecture is drains that don't smell, taps that don't drip, chimneys that don't smoke." Large says the judges assess architecture by the senses of touch and smell, and that they are nearly as hopeless as the mechanical engineers who, according to Large, understand nothing they can't multiply or divide on a slide rule, or plot on a curve. 'When I take a mechanical engineer over one of my buildings," said Large, I always talk to him about the kitchen range or the hot-water pipes, till he is convinced that I am a great architect. Yes."

The book not only contains a great deal that is clever and diverting, but we believe it will have an educational value if read as it should be, by the general public, who will learn something about architecture and building and will probably learn to understand the difficulties an architect has in erecting most buildings and the meaning of requests which are made to them. For instance, the following remarks on the subject of cupboards may be a revelation to some people: "Well," said Nita, laughing, "you are giving *us* plenty of cupboards." "Yes, you asked for them, and they are all tucked away into useless places. People forget that cupboard space costs at least as much as any other part of a house. Yes. "I pointed out to a lady a little while ago that she was spending some twelve pounds a year in rent on cupboards which she was using to keep a number of empty jam-pots and pickle jars at an even temperature, and protected from stress of weather."

But we must not quote further. We congratulate the author on an excellent work, which will undoubtedly enhance his reputation.

STATE AID FOR HOUSING.

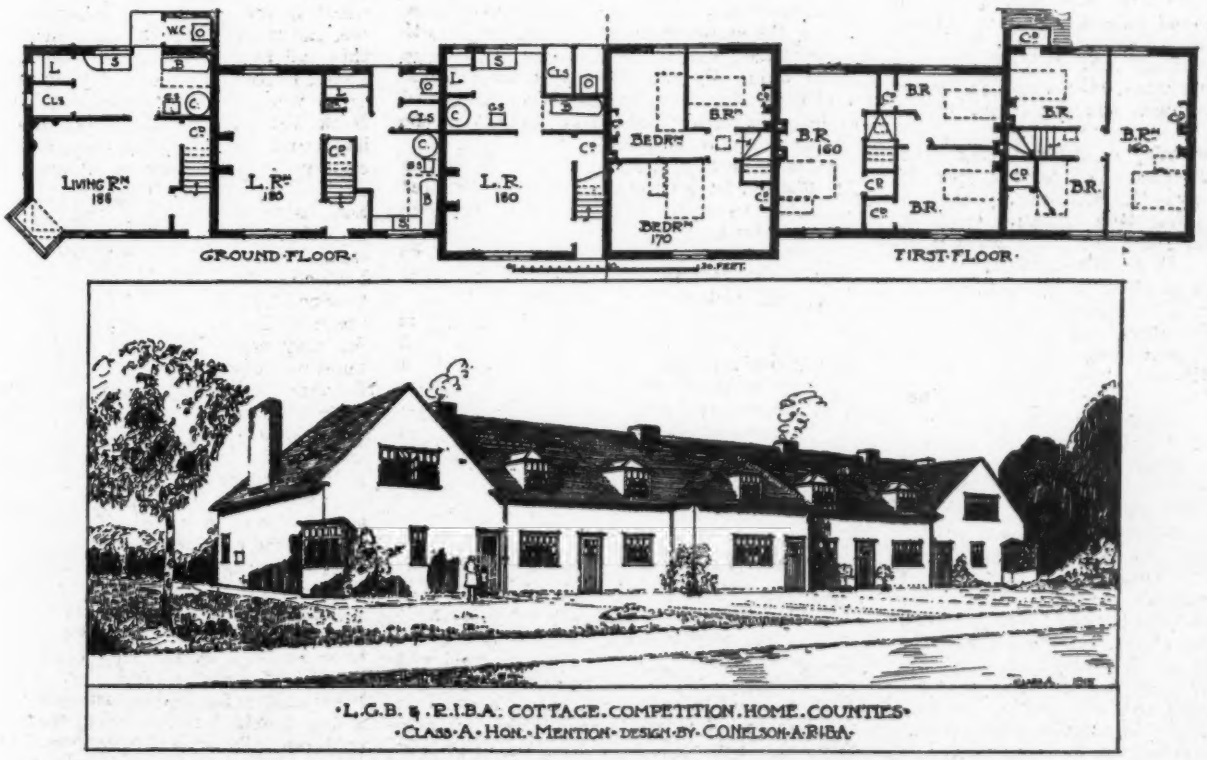
The Housing (Financial Assistance) Committee, which the Minister of Reconstruction, Dr. Addison, appointed under the chairmanship of the Rt. Hon. Henry Hobhouse, to consider how far the encouragement of private enterprise in housing could be carried, has now presented an interim report dealing with the Pubic Utility Societies. The committee recommend that loans of 80 per cent. of the value of any housing scheme carried out by such a society should be made by the State, at the lowest rate at which it can lend without loss. Repayment may be spread over fifty years, and advances made during building. They are unanimously agreed, however, that loans alone will not produce any substantial number of houses, and that subsidies will be essential, because the cost of building will be so high for a time as to make it impossible to obtain a commerical return upon money invested in immediate house-building.

The majority of the committee express the opinion that—if the State wants houses, the State should bear the whole of the loss incurred by a society in building at once; otherwise, there will be temptation to wait till building is cheaper, and houses, urgently needed, will not be forthcoming. The fact that the State is bearing only 75 per cent. of the loss on local authority schemes is not inconsistent, they urge, with their suggestion that the whole of the abnormal loss of societies should be borne by public funds; because, as they point out, the remainder of the loss (25 per cent.) on local authority schemes falls on the rates, therefore the community, either as taxpayer or ratepayer, is really bearing the loss. They state, nevertheless, that they "feel precluded" from recommending that the State should bear more of the loss in the case of public utility societies than in that of local authorities, and they therefore recommend, that the State should bear 75 per cent. of the loss, and that the local authorities should be empowered to subscribe to the remainder. Even this they consider will produce houses only in special cases—where employers or others have an urgent need for houses, and are prepared to lose money, and where a local authority prefers to assist a society rather than to build for itself.

The minority dissent from the opinion that the whole loss could be borne by the State, and recommend that the same terms as those offered to local authorities should be applied as nearly as possible to public utility societies. Both majority and minority recommend that such assistance should be given only under stringent safeguards; security of tenure should be granted to the tenants, who should also have a share in management; schemes and rent should be approved by the Central Housing Authority, and professional and management expenses should be limited and the accounts publicly audited. They also recommend that, in view of changed conditions, the maximum rate of dividend payable by such societies should be increased from 5 per cent. to 6 per cent.

Air Raids on Britain.

The Committee on War Damage, writing to Mr. G. L. Wardle, M.P., Parliamentary Secretary to the Board of Trade again urging the Government to "give full effect, without further delay, to the principle of national responsibility as accepted by the Prime Minister on July 13, 1917, declares that from returns sent in from fifty-one municipal districts which have suffered from air raids or bombardments, it is shown that at least 488 persons were killed, 1,014 injured, and the estimated cost of making good the damage to property is £677,773.



L.G.B. & R.I.B.A. Cottage Competition.—Hon. Mention.
Design by C. O. NELSON, A.R.I.B.A.

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ILLUSTRATIONS.

East Window, Buckland Church.

MR. HENRY HOLIDAY has selected the subject of "Christ and His Church" for the East window of Buckland Church. The colouring is very rich, blues and greens predominating in the upper portion, whilst soft, warm tints of madder and red are more prominent in the lower or base portion of the window. The treatment of the detail is very simple and refined; the leading never obtrudes itself, but gives strength to the design.

The window is divided into three portions, the upper part represents "Christ Enthroned in Glory," surrounded by angels and supported one on each side by "St. Gabriel the bringer of good" and "St. Michael the banisher of evil."

Immediately below are the saints. The colouring and arrangements of the drapery of these figures is specially good. The lower portion of the window illustrates terrestrial subjects: In the centre a king and queen with the chief dignitary of the Church, surrounded by typical figures representing, on the left, "Philosophy and Poetry, Science and Agriculture"; on the right, "Art and Handicraft, Mathematics and Music."

Nos. 42, 43 and 44, Hertford-street, Mayfair.

This group of houses was erected during 1915, before the difficulties caused by the war became acute. Though the dimensions of the site are very restricted, the frontages being less than 23 ft. with a depth of 57 ft. abutting upon other premises, the accommodation of each house includes five reception rooms, ten bedrooms, and four bathrooms. The elevations are in Portland stone, and the internal arrangements are very complete, hot and cold water being laid on to all bedrooms and vacuum-cleaning plant installed. The buildings were erected by Messrs. C. F. Kearley, Ltd., of 4, Great Marlborough-street, the carving being executed by Messrs. Gilbert Seale & Son and the fibrous plaster and carton-pierre by Messrs. Battiscombe & Harris, Ltd. Messrs. George Corderoy & Co., F.F.S.I., prepared the quantities.

The architect was Mr. Claude W. Ferrier, F.R.I.B.A., of London and Paris.

Offices for the Board of Trade.

This design, by Mr. A. R. Jemmett, F.R.I.B.A., Mr. G. T. McCombie, and the late C. E. Mallows, F.R.I.B.A., was submitted in open competition The general treatment of the scheme was dominated by the river. It was felt that any building on this site with no main frontage to, or direct approach from, Whitehall, must inevitably face the river with an architectural approach from the Embankment. As the general entrance was not required on the river front, it was conveniently placed on the central axis, where future improvements might eventually open it out to Whitehall, while a ceremonial entrance from the Embankment gave an architectural approach by way of the central courtyard to the Conference rooms, and to the rooms of the President and the high officials.

A small portion of the site was thrown into the street without loss of accommodation in order to improve both the building and its surroundings.

The general arrangement of the building was governed by the wish to give every office in the interior of the building an outlook into an architectural courtyard, free from lavatories or other services; to give the corridors direct side light and ventilation, and to provide the sanitary and service blocks with separate areas and cross-ventilation. The circular form of the courtyard seemed best adapted to fulfil these conditions, while giving the maximum of office accommodation and the necessary intercommunication between the opposite sides of the building.

The conditions of the competition seemed to rule out any attempt to deal with the problems on more definitely modern lines.

Chester House and Lees Court.

We give this week two interesting interiors by Mr. R. Atkinson, with whom in the case of Chester House the late Captain G. L. Alexander was associated.

UNITY IN ARCHITECTURE AND COLOUR DECORATION.

ON Tuesday, November 12, Mr. Ivor Beaumont, A.R.C.A., M.S.A., F.R.S.A., F.I.B.D., delivered a lecture, illustrated by a number of excellent lantern slides, on "Unity in Architecture and Colour Decoration," before a meeting of the Incorporated Institute of British Decorators at Painters' Hall, Little Trinity Lane, Cannon Street.

Mr. Beaumont said that when Michael Angelo used the phrase, "I know of but one art," he realised that architecture, painting and sculpture must go hand in hand if perfect achievement was to be attained; and it was only in conjunction with painting and sculpture that architecture could be its best. His (the lecturer's) aim was to show the special alliance between architecture and colour decoration. In this country more than any other every artist was a specialist. He did one thing well and passed his whole life doing it, and was, with very few exceptions, incapable, not only in the practice, but also in the true appreciation of any other branch of art. Painting, sculpture and architecture went to make the true art which was the union of the three. He believed that the art education of to-day was wrong. Each branch of the art ought to be taught to every craftsman, even though he might afterwards devote himself to the special practice of one branch, and if they were to hope for broader results than had been attained in the past they must alter their art education. Their students should receive such an education as the craftsman obtained in the fourteenth and fifteenth centuries. A craftsman required a practical education so as to enable him to understand the material and apply the designs to the material. In the past, decorative painting, building construction and architectural sculpture were practised by the same man, and there were very few specialists. The study of coloured decoration should undoubtedly go with the study of architecture, and naturally they ought only to consider architecture that was worthy of expression. No building should be designed unless sculpture and painting were to be represented in some form or other. The greatest flights to which the decorator could aspire were to those magnanimous compositions of the Sistine Chapel at Rome by Michael Angelo; the Stanze Vatican at Rome, by Raphael; the Library at Sienna, by Pinturicchio. There were great decorative works, too, in the Upper and Lower Church of San Francesco at Assisi and the Arena Chapel at Padua, executed by Cimabue and Giotto, and those of the Church of Eremitani at Padua, by Mantegna. Certainly they could not aim higher than those, for though centuries had passed since their completion, they still lived. Good construction and design must go together as the basis of all fine architecture and decoration, and the decorators of Egypt were perfect masters in the application of colour and design. Having traced in detail the decorative schools of Babylonia, Assyria and Persia, the lecturer remarked that Greek architecture, too, was coloured, and that was done in order to emphasise leading features. The Parthenon and the Temple of Theseus were painted, but the greatest structure in the world, illustrating most emphatically the unity of colour and architecture by means of coloured materials was the Church of Santa Sophia at Constantinople. It was a Mohammedan mosque, built by a Greek architect, Anthemius, of Tralles, in Asia Minor. Mr. Beaumont described in detail the beauties of this church, and remarked that the great beauty and charm of its wonderful interior lay in the constructive features, the coloured materials, and the beauty of the great horizontal cornices. He also threw on the screen, and described in detail, a picture of the little twelfth-century church of San Miniato, situated on one of the hills overlooking Florence. This church, he said, exemplified the use of coloured materials, and showed unity in the decorative and architectural scheme to a marked extent. In conclusion, he said that one of the finest examples of the unity of architecture and colour decoration was to be seen in the decorative work in the Central Criminal Court at the Old Bailey, by his friend, Professor Moira. The wall-paintings were rich in colour and broadly executed. Symbolical figure sub ects representing Justice, Mosaic law and English law, filled the semi-circular shapes. The dome was divided by ribs into panels, and in those were introduced single figures representing Art, Truth, Learning and Labour, while the spandrels between the lunettes also contained figure subjects.

HOUSING IN GREATER LONDON.

PRESIDING at a conference of representatives of public authorities in Middlesex at the Guildhall, Westminster, recently, Alderman William Regester, chairman of the County Council, said the housing problem in Middlesex was largely bound up with the question of London's arterial roads. He hoped that the task of housing in Greater London would not be carried out by the County Councils. It should be undertaken by the governing authorities concerned in co-operation with private enterprise. The cost should be borne mainly by the Imperial Exchequer, but if it was decided that it should be paid for out of local rates, then the terms of repayment should be of an easy character. Mr. Cuthbert Brown advocated the laying out of four garden cities, each accommodating 50,000 inhabitants north, south, east and west of London, the cost to be equally shared by the seven County Council areas included within the radius of fifteen miles from Charing-cross. Mr. G. Marlow Reed moved, and the conference agreed, that the area of Greater London should be a radius of fifteen miles from Charing-cross, to form a unit for a single authority for housing purposes, and the cost charged equally throughout the area.

MEETINGS.

MONDAY, *December* 9.

The Surveyors' Institution.—Ordinary General Meeting. 5 p.m.

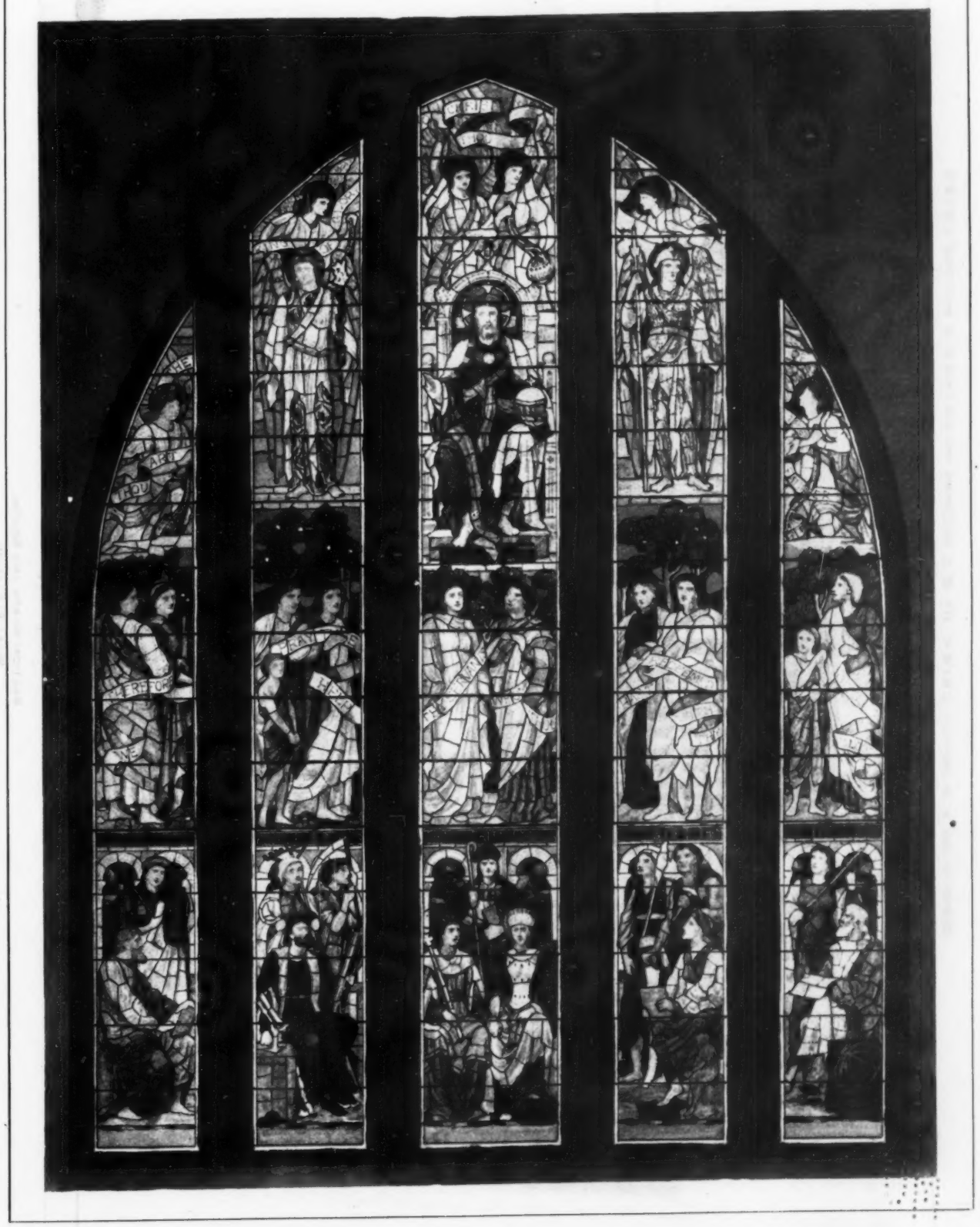
Trades Training Schools.—Prize Distribution by Sir Aston Webb, K.C.V.O., C.B., R.A., at Carpenters' Hall, London Wall, E.C. 7.45 p.m.

FRIDAY *December* 13.

Anglo-Hellenic League.—Mr. T. H. Mawson on "The Rebuilding of Athens" (in the Great Hall, King's College, Strand). 5 p.m.

LEES COURT, FAVERSHAM: STATE BEDROOM.

Mr. Robert Atkinson, F.R.I.B.A., Architect.



EAST WINDOW, BUCKLAND CHURCH. By Mr. Henry Holiday.

NOS. 42, 43 & 44, HERTFORD STREET, W.—MR. C. W. FERRIER, ARCHITECT.

PHOTO: BEDFORD LEMERE & CO.

CHESTER HOUSE: DECORATION OF ENTRANCE HALL.

MR. ROBERT ATKINSON, F.R.I.B.A., AND THE LATE CAPTAIN G. L. ALEXANDER, ARCHITECTS.

A NATIONAL ARCHITECTURE.—X.

BY W. R. LETHABY.

QUESTIONS OF DESIGN.

IT was before suggested that a simple and understandable definition of the mysterious and often betraying word "Design" was: *the arranging of how work is to be done.* Of course, this solves nothing; for the question next becomes: But how is work to be done? Still, I do think that if some such plain meaning were generally accepted from early student days that the view-point might really make it easier to find a line of direction. The word itself is closely associated with drawing—indeed, in Miss Austen's day mere drawing was "designing." Drawing, however, is not essential to what we architects mean by design, although it has come to be an accurate means of defining our intentions and making them clear even to ourselves. The Work is the essential thing, not the drawing, and much fine work has been done without drawings. There was even, perhaps—I don't want to exaggerate—a special advantage in working without drawings, for in that case it was usual to plan the new work like some selected model, only bigger or smaller or otherwise modified. This course may also be followed when there are drawings, but there is a special danger that those who use paper may get to think paper, and then to build paper. Far too many of our erections are carefully executed models of paper patterns, rather than buildings solid and serious. Drawings or no drawings, the best way of arranging for new work is to *do it like a selected contemporary model, only better.* Even the most original designing is only variation. True originality only comes to the man who knows. It is the astronomer who finds the new star. The selected model should be in solid work: we really must learn to look at buildings in being.

Modernism and Austerity.

Throughout I have criticised all style simulation as an ideal, but it will be readily understood that in practice there are, or rather have been, differences between the learning and taste of Cockerell or Street on one side and the ignorances and ineptitudes of men of inferior gifts and aims A lowest depth, too often reached—indeed, we need to recognise how our methods necessarily result in so much depth for so little height—is the loading and besmearing the face of a building with rancid "ornaments" which are supposed to be the marks of style. Having this disease in mind, it may, I think, be suggested that all our work at this present time should be somewhat bare and austere. Little should be passed without good reason—clearness, science, intelligence must be the notes of modern work. But I am only urging the reconsideration of the "beggarly elements" as far as possible and a gradual leaving of the things which are behind. There are virtues of omission as well as of commission, and if only one "style" feature or hack ornament could be left out, there would be positive gain. We need not expect anything to happen: changes come slowly and we have to educate the young. It would, however, be worth an effort to find a way for the next generation so that they should not be met again by the disillusionments of our time. A clear objective is the first need of all.

Nothing can seem right which stands much outside the custom of the time, but of course, where major considerations, like structural needs, bring strangeness it is justified. One of the best architectural sayings I have ever heard was a remark by Mr. Philip Webb: "I can't rest till my work is commonplace." Wren said much the same—that architecture had to be according to the "gust" of the age. This was his apologia for the style of St. Paul's, although he himself scorned the "edgings."

Country and Town and Economic Demand.

There seems to be some distinction between the ideals, or at least the possibilities, of building practice in cities and in the country. In the latter it is desirable to use local material and to follow characteristic methods of workmanship. In the other case the whole country—indeed, the whole world—may be drawn on for material, building operations will be highly organised, and the directing mind may be specialised. Economic demand is, I feel, a valid datum of design if it is a natural and non-vicious demand. If it be a low profiteering demand the work following will be of the same class. We find Welsh slate distasteful in the main because of the rows of dreadful little houses on which it has been used. There is nothing necessarily bad in the material. In any case, it is a safe rule to use local material as far as reasonably possible.

As Cardinal Newman said of an argument, "you can only get out of it what you put into the definitions"; so we can only get out of a building what is put into it of heart and intellect. Just the same problems in regard to "modernism" have arisen in all other non-scientific spheres—in painting, sculpture and music. Thus the late Sir Hubert Parry defined musical style as "the perfect adaptation of means to ends, with the corollary that as conditions vary continually with time and place, no mere copy can possess style." We must not copy the past, but learn from one another.

Some Suggestions on Designing.

Again and again I have tried to bring out the fact that design should be approached as experiment. It may be said that, of course, all design is experiment. Yes, but there is the greatest difference, as I have found in dealing with young pupils, between "experiments in design" and pure experiment—playing the game of variation, going where the argument leads and seeking to exhaust the possibilities of combination. It is this last course which has to be pursued, and then the designs make themselves and have a fulness of content which cannot in other ways be obtained. Those who play the game of building experiment with a free mind and bold heart will win. A fine school of art is to be obtained at any time by concentration; anything may be grown by intensive culture. "I don't believe that design can be taught," is a remark which I have often heard made, and I am ready to agree if I may add, "because everybody has the aptitude already, before it is carefully crushed out by heavy teaching, on the styles and proportion, schools and periods, genius and Michael Angelo."

Whenever we interest ourselves in principles rather than precedents, growth will take the place of stagnation. Experiment will be as much the *novum organum* of architecture as, in Bacon's day, it was to be of the natural sciences.

I have been dealing with design all along, but I may here set down some short suggestions on points which may seem more open to individual choice:—

1. Consider first the obvious, the sensible and the serviceable, the sound and the tidy, economy with efficiency Consider health, provide ample light, be intelligible; eliminate weak points which will get out of order and lead to repairs; make access to roofs, chimneys and windows easy. Aim at *perfect Fitness with appropriate Finish.*

2. Think in the solid. That which looks bald and bare on the drawings, as a "design," may be admirable when built. In the building we see the "returns" and projections, and it is all changed by the colour and texture. Paper is betraying; there is a designing paradox—that what is gained in detail is lost in the sum.

3. Over-designing is the gratuitous mistake to which most of our vulgarities are due. All "ornamental" design is dangerous. I remember Mr. Norman Shaw saying "the backs are always better than the fronts."

4. Keep non-essentials specially quiet and unobtrusive. It is the commonest mistake to call attention to some mean feature—a lean-to greenhouse, for instance—by ornamentation; if it is simple and unaffected it will be unnoticed. Avoid complications and wriggles in external pipes; the plain, half-round eaves-gutter is usually the best.

5. Save on the common extravagances and vulgarities of building, like "handsome" plaster cornices and bold skirtings, and spend the money on some one really good thing—a modelled plaster panel, a better chimney-piece, an inscription, some good tiles. In works of higher status substitute true *painting* and *sculpture* by free men for "decoration" and carving by the routine labour hired out by "firms."

6. Study a prototype, and try to improve upon it. Custom and congruity should settle most architectural questions. Only a narrow line divides the effective from the exaggerated.

7. Where possible, get levels to range. See round the corners; a sense of orderly arrangement and thoughtful care will go far.

8. If the conditions allow, it is often desirable to have a middle term between the horizontal and vertical in some diagonal or curved lines. When a window is divided by a transome it is most usually put just above the half height.

9. Study local customs and materials. For country buildings call up a memory of nature, and beware of insulting the landscape with trivialities and snobberies. In towns, carefully consider the neighbouring buildings, and their character as a whole.

10. Think of colour as well as of form

the gloom of our cities must be taken into account.

11. Thinking mainly in paper we miss the most important factors which make for reasonable and pleasant results. How far is carving justified in our soot-depositing atmosphere? What is generally the best treatment of glazing? Observation in the streets of London has convinced me that practically flush windows are the best for the conditions; we get the value of the reflections of the sky in raking views and deep-set windows are frowning and dirty.

12. It is a common-place of the schools that you must first make a plan, and then draw the elevations; but this, reasonable as it seems, is a mischievous drawing notion. A building has mass, and all the parts are so closely interrelated that they cannot be separated into plans and "uprights." The plan depends on the roofing, on equilibrium, and on the total organism. One might as well think of designing a statue in plan and elevation as a house. Therefore, we must get back the use of our eyes, and study buildings in their total volume 'in the round." I don't see why modern building might not soon be a national art at least as interesting as good engineering and ship-building. If we can get back reality we shall soon have beauty.

FUEL ECONOMY IN PRIVATE HOUSEHOLDS.*

By A. H. BARKER, B.A., B.Sc., Wh.Sc.

Lecturer in Heating and Ventilating Engineering, University College.

Method of Testing the Heat Requirements of a Room.

The most practical method whereby the amount of heat needed to warm any particular room can be determined, and it is perfectly easy, is to fix in the room, by means of a rubber tubing, a number of independent gas jets, say, three. Shut all the doors and windows, and light all the gas jets, taking careful note of the meter readings, and also of the temperature of the outside air. Choose a day, if possible, when the temperature is freezing.

After the lapse of a certain time the room temperature will have risen up to 60 degs. Turn all the gas jets down, just so low that this temperature is exactly maintained neither more nor less; that is, if the temperature shows a tendency to rise, turn the jets slightly down, and if to fall, turn them slightly up.

Take a note of the reading of the gas meter at a particular time and then again after a lapse of, say, five or six hours, the inside and the outside temperature having been, generally speaking, constant throughout that period. Then calculate the number of cubic feet of gas burnt in that time. Multiply this by 500 and divide by the number of hours. The figure so obtained will give a very good idea of the coldness or warmth of the room, and the amount of heat needed to warm it effectively.

I commend this exercise to anybody who finds his Sundays dull.

I recently made some calculations, and for that purpose it was assumed that the total number of cubic feet used in a 6½ hours run has been, say, 74 as shown by meter. From the results of this calculation the room needed an amount of heat equal to 5,700 B.T.U. per hour to keep it warm, although, of course, a great deal more is needed to warm it up rapidly.

* Continued from page 367, November 29.

Calculation.

Contents of room 2,500 cubic feet. Temperature inside 60 degs., outside 30 degs.

Total heat units used in 6½ hours $74 \times 500 = 37{,}000$ B.T.U.

Total heat units used per hour $\frac{37{,}000}{6{\cdot}5} = 5{,}700$ B.T.U.

Figure of merit $\frac{5{,}700}{2{,}500} = 2{\cdot}27$ for 30 degs. difference, or ·076 B.T.U. per degree per cubic foot.

The room is approximately of average warmth.

Thus an average value of the number of heat units required to maintain a room heated by hot air at a comfortable temperature in freezing weather, calculating both for the escape of heat and the escape of warm air together, is roughly about twice the cubic contents. This amount naturally varies with the difference of temperature between the inside and the outside in proportion. Thus, if the temperature difference is only 15 instead of 30 the amount of heat required is about the same as the cubic contents.

Naturally, also, the amount varies according to whether the room is cold or warm in construction—the thickness of the walls and the like. It varies, too, with the amount of fresh air brought in.

For a very cold room the figures are sometimes even twice as much as the above, namely, four times the cubic contents; and for a very warm room they are perhaps three-quarters of these figures under the same conditions.

Table VII.

AMOUNT OF HEAT PER HOUR NEEDED TO WARM A ROOM BY HEATING AIR.

	B.T.U. per hour
A. ORDINARY ROOM (2,000 cubic feet)	
Heat leaking through walls, &c.	2,000
Air leakage (ventilation) .. Two changes per hour	2,000
Total	4,000

=4 gallons very hot water.

B. VERY COLD ROOM, say double above figures.

C. VERY WARM ROOM, say half above figures.

Heating by Radiation, 66 per cent increase.

Table VIII.

DISTRIBUTION OF TOTAL HEAT OF COAL AND GAS FIRES, &c.

COAL FIRE ..	Radiated ..	25%	100%
	Convected ..	5%	
	Conducted ..	15%	
	Chimney loss ..	55%	
GAS FIRE ..	Radiated ..	50%	100%
	Convected ..	15%	
	Chimney loss ..	35%	
ANTHRACITE STOVE	Convected ..	35%	100%
	Radiated ..	15%	
	Chimney loss ..	50%	
WATER RADIATOR	Convected ..	88%	100%
	Radiated ..	12%	

By burning coal in an open fire we obtain an amount of heat which is about one-quarter of the total amount of heat in the fuel burnt in the time.

Thus, if in an ordinary open fire we are burning two lbs. of coal in an hour, the value of the coal being 14,000 heat units, the total amount of heat units produced in the burning of the fuel is $2 \times 14{,}000 = 28{,}000$ heat units. Of this a coal fire gives off perhaps 25 per cent. in the form of radiation, or perhaps 7,000 heat units. This is equal to 4,200 units of air heat. For a room of 2,000 cubic feet content this should be ample.

But heating a room by hot air is far from being as comfortable a method of heating as by a glowing fire. It makes the air of the room feel stuffy, whereas the heat from a glowing fire has not that effect. We must, therefore, reckon for a room that heat coming into the room in the form of radiation only produces little more than half the effect of heat coming in as hot air.

Thus, we see that to burn two lbs. of coal in an open fire per hour produces about the same effect as 4,000 heat units given off from a radiator or stove.

Let us now consider the heat given off from a gas fire. With the modern form of gas fire this is generally somewhere about 45 or 50 per cent. of the total heat in the gas given off as radiation.

Thus, if we are burning 30 cubic feet of gas per hour in a gas fire, the quality of the gas being 500 B.T.U. per cubic foot, and the efficiency of the gas fire being, say, 50 per cent., we are using in all some 15,000 heat units per hour, of which 7,500 come into the room as radiant heat, or about the same as a consumption of 2 lb. per hour on a coal fire.

Comparing, therefore, a coal fire with a gas fire, and assuming coal at 45s. a ton, and gas at 4s. a thousand cubic feet, we see that a coal fire costs ½d. per hour, while a gas fire costs 1½d., that is three times dearer than a coal fire for continuous running.

To burn a coal fire or a gas fire at the bottom of a chimney naturally makes the chimney hot, and this causes a powerful draught up the chimney, which has the effect of interchanging the warm air of the room for the cold air out of doors. It may be that this constant movement of cold air into the room is the cause of the generally accepted belief that an open fire is more healthy than a radiator. It is certainly the cause of the fact that a coal fire is much more expensive to maintain than is a radiator or stove.

Now with an electrical radiator there is no such effect. An electrical radiator is commonly placed in the middle of a room, and not under a high flue. With an electrical radiator, therefore, we not only get the whole of the heat corresponding to the amount of the electricity brought into the room, but we do not produce the effect of excessive ventilation which is invariably the effect of an open fire.

It is commonly the case that the heated flue produced by an open fire interchanges the air in a room somewhere about from five to ten times or more per hour, and this alone corresponds to a loss of heat equal to 2½ to five times the number of cubic feet in the room.

Calculating then the total amount of coal that would be burnt in an ordinary small open fire in a year for a room, say, of 2,000 cubic feet, and assuming the fire burning for ten hours a day, and for 200 days in the year, this works out at 2¾ tons per year. The fire will probably not be working at anything like full power for part of the time. If, therefore, we reckon half of this consumption as a fair average, we shall obtain about 1½ tons, which may be taken to represent a fair consumption to be calculated on for a coal fire sparingly used on all cold days.

Restoration of Cathedrals as a Scottish Memorial.

The Scottish Ecclesiological Society held the first meeting of the session in St. Cuthbert's Hall, Edinburgh, recently, when the Rev. Professor Cooper delivered a lecture on Elgin Cathedral. He spoke of the memorials which would be erected to the memory of the noble men and women who had given their lives in the cause of liberty and truth, suggesting that no better tribute could be paid to them than by restoring from their desolation the ancient cathedrals and churches of the land. He pointed out that of the fourteen Scottish cathedrals, seven were now entire, while three more were partially in use as parish churches, and four only in ruins. These four, from their history, made a strong appeal to patriotic and religious feelings, and he hoped to see them restored.

INSTITUTION OF HEATING AND VENTILATING ENGINEERS.

Fuel Economy.

At the Holborn Restaurant recently a special meeting of the Institution of Heating and Ventilating Engineers was held to consider the question of fuel economy.

Mr. E. Herring, the President, in an opening speech, said that the question of fuel economy was one of the most serious problems that had faced the country since the commencement of the war, and, in spite of the triumphant issue of the conflict, that problem still remained. A solution depended very largely upon manufacturers and others who used coal in bulk, and upon the co-operation of the general public, who, although they might use far less fuel than manufacturers, yet still had considerable influence on the question. Nothing was to be gained by disguising the seriousness of the position, and the question was likely to remain a vital one for many years to come. In regard to fuel economy the question might be viewed from three standpoints—first, the selection of the most economical fuel to be used in any particular case, having regard to the particular circumstances and local conditions obtaining; second, the means to secure economical combustion and efficient results; and third, the means by which the heat, when generated, could be conserved and its greatest value extracted before it was allowed to escape. It was, he thought, an undoubted fact that they could heat rooms and still lose a great proportion of the heat unnecessarily. He need only refer to the present day craze for more ventilation than was really necessary in the interests of public health. That was particularly exemplified in public schools, where the windows were maintained in an open condition which sometimes necessitated an increase of 50 per cent. in the heating over and above what would be necessary for a private dwelling house. It had been suggested that the Institution should appoint a committee charged with the duty of drawing up a complete scheme of practical suggestions and recommendations for securing economy in fuel consumption. He had been in communication with the Coal Controller on the matter, and he was glad to see present Mr. Wilson, who was the technical adviser to the Controller. The Institution ought to consider it a duty and a privilege to help in this important matter, but gentlemen who served on the committee would have to be willing to devote a fair amount of personal work and time to the duty. Under present conditions, when labour and materials were so difficult to obtain, he thought it was no use suggesting alterations and additions to existing plant which involved workmanship and materials to any extent. It would be possible for a committee to make recommendations of considerable value in the direction of improving existing appliances and securing therefrom more economical results. Among the questions which they might consider would be the collaboration of architects for the erection of buildings of such materials and forms of construction as would best conserve the heat generated in them, and prevent its escape to the outside air.

Mr. D. Wilson, technical adviser to the Coal Controller, then addressed the meeting at some length. He explained what the Department was doing in its coal economy campaign, and said that in the case of electricity undertakings alone they hoped to effect a saving of several millions of tons annually. When they considered that even if the Coal Conservation Committee's big scheme of super-stations was carried out, the maximum efficiency to be expected was only somewhere in the neighbourhood of 18 per cent. of the available energy, and it would be seen that there was scope for considerably more economy. They were endeavouring, as far as possible, to strengthen their organisation by appointing gentlemen who had special knowledge of their own industries, and in many cases industries had formed their own committees specially to consider economies in reference to their own industry. They welcomed the suggestion that the Institution should come forward and appoint a committee to help them in this direction. The public hoped, now the war was over, that they would see an end of controllers, and, speaking quite unofficially, he could not say what was going to happen in the future. The mission of the Coal Controller had been simply to carry on the country as far as the supply of coal was concerned relative to the war, and immediately that mission was finished it might be that its work would be handed over to some other Government department. So much good had been done already that he thought it would be a pity if its work was not continued in some form, as they had seen sufficient to convince them of the gross inefficiency that existed in the country in regard to coal consumption, not only in industrial firms but also in domestic heating.

Mr. Frank Biggin remarked that, in the enormous arrears of building work which would shortly have to be undertaken, he thought they would find that the scope for economy in coal consumption was very great indeed. His experience in large institutions had been very disappointing indeed when it came to the question of coal consumption, and without doubt there was room for very considerable economies. One of the questions that might be considered was that of the utilisation of peat as a fuel for small electric and other installations, and the using of waste gases from furnaces for the generation of steam for heating and power purposes. He also thought that they might do more in the direction of central heating.

Mr. A. H. Barker said he was of opinion that they must look for the greatest results from more economical methods in industry rather than from any saving they might make in domestic consumption. If they could cheapen electricity, as some of them thought possible, it would be found that the power would automatically displace every other form of light and heat. With regard to centralised heating, he was afraid that the scope of this method of economising was rather limited, owing to the expense of producing the heat. He had recently been at some pains to ascertain the services required for a large number of cottages to be served from one centre. He calculated that the cost of supplying 120 cottages with heat on this basis was quite prohibitive, as it would add something like £20 a year to the rent of each cottage, and even then it was not certain that it would result in a net economy of fuel. The difficulty was that, with central heating, it was necessary to keep the pipes hot for all the buildings the whole of the day, whereas the habits of the inhabitants of each individual cottage would vary. Central heating might result in increased convenience and increased economy in the case of large blocks of flats, but not in scattered cottages on an estate.

Mr. Comyns Ching said that at the present moment he had in progress a small town planning scheme, in which the houses were set out in blocks of about twenty, and they were fitting up a central hot-water supply. They were workmen's dwellings containing three, four, or five rooms each, and the heat was generated by steam boilers and carried by pipes. Including the heat loss in the pipes, he found it would be possible to supply something like 50 gallons of hot water per day for each house, at a temperature of about 140 degrees, at a total cost of fuel of about 1s. 2d. or 1s. 3d. a week. If, as he believed, this could be done it seemed to him that it would be much cheaper than if each house burned its own fuel in its own fireplace and its own little range with its own uneconomical type of cottage boiler.

FROM WAR TO PEACE.

"FROM War to Peace" was the subject of a statement made a few days since by Mr. F. G. Kellaway, Parliamentary Secretary to the Ministry of Munitions. Speaking generally in regard to the problem before the country, he remarked that the Ministry of Munitions already had information enough to be able to say that it should be a manageable problem, and that there need be no fear of the widespread unemployment and industrial unrest that had been widely anticipated. Considerable unemployment, especially among women, there was bound to be for some weeks—perhaps for a longer period—because in a great majority of cases it must take some time for firms to get the shops cleared and to have the necessary changes made in the machinery. But with that qualification, the Ministry had information enough to show that the reverse process in industry was going on satisfactorily.

A number of reports in regard to different firms scattered up and down the country, read by Mr. Kellaway, showed what is being actually done in this direction. In the munitions area of Hebburn-on-Tyne a firm previously engaged on the manufacture of aeroplanes, is turning over to the manufacture of heavy toys and furniture, giving employment to 500 people. A Newcastle-upon-Tyne firm, from producing aeroplanes is turning over to household furniture making, and will give work to 500 people. Another firm in the same town is changing from guns to the building of locomotives—a new industry, which will find employment for 5,000 people. A firm at Burnley, which was manufacturing fuses, is turning over to the manufacture of electric fittings. At Leigh, in Lancashire, a firm is going to produce presses for brick-making, and it is estimated they will employ about 1,000 persons. A Sheffield firm is turning over from the manufacture of shells to files and springs, and expects to employ 1,000 persons. At Leeds, one firm will cease to make steel pressings for mines and copper bands for shells, and make dairy utensils; while another, which was engaged in assembling aeroplanes, will devote its buildings to the making of iron valves as an adjunct to their brass valves department. One Birmingham firm is changing from the production of fuse components and aeroplane parts to the manufacture of motor accessories; and another from aeroplane plants to capstan lathes.

Commenting on these reports, Mr. Kellaway said there were certain difficulties in the way of getting these processes carried through rapidly. One of the necessary things was that the pivotal men should be got back quickly from the Army, and arrangements for that being done were now well in hand. His experience was that the Army authorities were showing great good sense and help in that direction. There was also the difficulty of getting the new type of materials required, and that also, he thought, was being satisfactorily got over. He wished to pay a tribute to the way in which the great majority of employers were carrying out the recommendations made to them by the Government in regard to any necessary discharges following on the cessation of their contracts. They were showing in that way a good deal of sympathy and good sense. Looking at the problem as a whole, whilst he did not want to raise undue hope, the Ministry was in a position to say that general progress in trade was going on as well as anyone could reasonably expect.

Temple of Hygiene as a Peace Memorial.

A number of influential medical men are interesting themselves in a proposal to build a Temple of Hygiene in the centre of London, so as to afford better facilities to the Institute of Hygiene to prosecute its useful work and be a lasting and practical memorial to our great victory and peace. The health, strength, and fitness of the nation is now of the first importance. Sir Malcolm Morris has consented to act as chairman of the committee, and Sir Samuel Scott, Bt., M.P., is the hon. treasurer.

THE CONCRETE INSTITUTE.

PRESIDENTIAL ADDRESS.

AT the Eighty-second Ordinary General Meeting of the Concrete Institute, held on November 28, at Denison House, 296, Vauxhall Bridge-road, Westminster, S.W. 1, the Presidential Address for the new session was read by Mr. H. D. Searles-Wood, F.R.I.B.A. In the course of his remarks the President said that the relations between architects and specialist engineers had been dealt with by the Concrete Institute in the following report :—

REPORT OF THE SPECIAL COMMITTEE OF THE CONCRETE INSTITUTE ON RELATIONS BETWEEN ARCHITECTS AND SPECIALIST ENGINEERS.

On November 18, 1915, the Council of the Concrete Institute appointed the following as a Special Committee to consider and report upon the Relations of the Architect, the Reinforced Concrete Specialist and the Structural Engineer :—

Professor Henry Adams, President, C.I. M.Inst.C.E., &c.
Dr. Oscar Faber, D.Sc., Assoc.M.Inst.C.E., Chief Engineer of Messrs. George Trollope & Sons and Colls & Sons, Ltd.
Mr. H. D. Searles-Wood, F.R.I.B.A., Vice-President C.I., &c.
Mr. T. B. Shore, Manager of Considère Construction Co., Ltd.
Sir Henry Tanner, C.B., I.S.O., F.R.I.B.A., Past President C.I.
Mr. R. W. Vawdrey, B.A., Assoc.M.Inst.C.E., Engineer to Indented Bar and Concrete Engineering Co., Ltd.
Mr. H. Kempton Dyson, Secretary C.I. (Hon. Secretary of Committee).

Sir Henry Tanner was elected by the Committee to act as Chairman.

The increase in scientific knowledge in the nineteenth and present centuries has not left unaffected the construction of modern buildings, and at present there are very few buildings in which concrete and steel do not form important parts of the whole.

The calculations and detail designs for such structural elements necessitate the exercise of specialised engineering knowledge and involve considerable additional work beyond the duties of the architect. It is usual, therefore, to employ an engineer to design the structural steel or reinforced concrete portions of the buildings.

The employment of an engineer, to design such details of construction, does not mean that the architect's work is reduced in any way. Indeed, the architect has now more duties to perform than in the past, owing to the more complicated nature of buildings generally, involving the co-ordination of various specialist trades. Not only has he to prepare and direct the general scheme of building operations, to plan the buildings, design the æsthetic features and prepare the ordinary constructional details and specifications but he has to see that the many by-laws and regulations are conformed to. These latter increase in number, while the law of building contracts in itself is becoming more intricate as time goes on, and the architect is generally required to occupy the position of a quasi-arbitrator between client and contractor.

The functions of the architect have changed with the progress of civilisation, and there are some differences in practice in different countries. In the Middle Ages the designer and general superintendent of building operations was a master craftsman, employing labour direct. This still applies somewhat to-day in France and Germany and in the Colonies. Within modern times in England the architect acted as contractor, tendering in competition, even for large public buildings, by submitting a design and price at one and the same time. We still have contractors, prepared to submit designs for buildings complete with their price, but the practice is not generally considered to be satisfactory by clients, who wish to have their interests watched by one whose interests are entirely independent. The practice of architecture has thus become exclusively professional. In an allied way the practice of civil engineering has also become professional.

Originally the contractor had to take out his own quantities from the architect's or civil engineer's drawings, in order to prepare his price, and with a multiplication of competing contractors this meant considerable waste in duplication. In order to save this the profession of quantity surveying came into being. Seeing that the preparation of the bills of quantities is incidental to the contractor's pricing of the work and to the adjustment of variations and extras, the quantity surveyor's fees are part of the cost of construction, and are customarily included in the bills of quantities for payment out of the contract sum, although in some cases the surveyor is paid direct by the client.

Other innovations in building practice have been the invention of fire-resisting construction, heating and ventilating apparatus, sanitary appliances, hydraulic and electric lifts and other mechanical plant. These features, which all require special design, were at first, and are still, largely supplied by inventors, acting as manufacturers and sub-contractors, and are often selected by architects and included in the bills of quantities for payment out of the contract sum. With increasing knowledge, architects have occasionally prepared the designs for such details, when they were quite simple, and have asked nothing for the extra work, whilst in other cases the manufacture of special fittings has become somewhat standardised, so that the cost of the design forms but a small proportion of the manufacturer's establishment charges.

In structural engineering each job is individual, and there is little repetition. The cost of the designs for the details of reinforced concrete or structural steel work is therefore considerable ; and when this work is multiplied, by several specialist engineers submitting competitive designs, the costs are largely increased and have finally to be met by the client in the form of increased charges, included in the tenders. Some specialist firms obtain their fees for design by way of profit on the steel work, which they sell ; some, again, by selling patented forms of steel bars ; others, by sub-contracting for the whole work of manufacture and construction ; and still others, by charging royalties or fees, which are paid by the general contractor and included in his tender.

Competition in design and price has at the same time led to abuse, not only in respect to extravagance by duplication of work, or in the difficulty of securing the client's interests, in adjusting variations and extras, but in respect to the encouragement, which such a system gives to skinning and scamping in design and execution. It pays competing firms to take risks. The conscientious designer is at a disadvantage, and therefore the unscrupulous are often encouraged at the expense of those who are doing their best to supply what will efficiently meet the client's requirements. Yet the architect is called upon to bear the onus of failure ; for he cannot evade legal liability for the design and supervision of such structural work, unless the designer of such details has professional status, properly recognised by the building owner. Time is generally saved by the collaboration of the specialist engineer with the architect in the initial stages, which in itself makes for economy. . . .

The Committee considers that, when an architect desires to employ an engineer to design and supervise the erection of reinforced concrete or steel frame construction, the client should pay an additional percentage on that portion of the work.

The rate of payment should be varied according to the amount of work entailed in the structural engineering design, specification and supervision ; but, as a general indication, it is suggested that the additional fee to the specialist engineer should consist of a commission on the cost of the particular details which he designs. It is emphasised that the engineer's fees would only be charged on a portion of the work, rarely amounting to a third of the whole cost of the building.

As regards the supervision which is to be required from the structural engineer, it should be distinctly understood, as in the case of the architect, that such supervision is different from the continuous personal superintendence which may be secured by the employment of a clerk of works or superintendent of construction. The supervision by the engineer means such inspection (by himself or deputy) of work in process of erection, completion or alteration, or of work in shops, as he may find necessary to ascertain whether it is being executed in general conformity with his drawings and specifications or directions.

A clerk of works or superintendent of construction will generally be required, and such assistance should be employed by the architect at the owner's expense, the responsibility of the engineer being protected at the same time by the latter being empowered to require the discharge of the clerk of works or superintendent if he considers his work inefficient. Reinforced concrete in particular requires continuous attention from superintendents of special training and experience, and it may be necessary on works of magnitude to engage more than one clerk of works, or superintendent to protect adequately the interests of the owner.

The Committee is of opinion that the rational procedure would be for the architect to select a specialist engineer, who should design the structural engineering work in consultation with him, and then to have bills of quantities of the special work prepared by the surveyor engaged for the remainder of the work, so that all can be issued together. By this means fair tendering would be obtained and any variations could be properly priced. The architect's commission has hitherto covered all the necessary services in the designing of a building, and it seems, therefore, that in some way this course should be continued, especially having regard to the architect's responsibility for the whole structure, because otherwise he would have difficulty in recovering from the engineer, as there would be no privity of contract. The Committee suggests, therefore, that the remuneration of the architect should take the form of some addition to the usual percentage, according to the character of the work—say 20 per cent to 25 per cent.—wherever skeleton steel or reinforced concrete structures are used ; and it has to be borne in mind that by the employment of an engineer the architect derives *some* saving in labour and expenses, but by the above suggestion practically the *whole* cost would be met.

It is not the province of the Committee to suggest what the remuneration of an architect should be ; but it would seem that no single percentage can meet all cases, consequently its recommendation is for a percentage in regard to engineering works on the charge that would otherwise be made on the whole work.

I regret that the Royal Institute of British Architects has decided not to deal with this Report.

With regard to the specialist, there are several kinds ; he may, for instance, deal in a patent article requiring special knowledge for its application to individual cases, such as some reinforced concrete systems. Again, the specialist may be the contractor, his services consisting not only of design but of execution, and here again special knowledge has to be adapted to individual cases ; in this connection take the cases of heating and lighting systems. A third instance is a specialist product, such as elevators and labour-saving devices of the like nature. Again there is the specialisation in a material, probably requiring expert chemical knowledge, such as waterproofing compounds, special pavings, &c. There is also the specialist who assists the architect in his work at a fee, as for instance the quantity surveyor or the constructional steelwork designer. There are varying degrees in each case, and it is impossible to

draw a line between the various types involved with regard to the work now commonly undertaken by specialists there is a broad line of distinction to be drawn between the following classes :—

(1) Work forming an integral and essential part of the structure, such as steel framework, or in a stronger degree, reinforced concrete construction.

(2) Work which is, to a greater or lesser degree, applied to or installed in the finished structure, such as heating, ventilating, and lighting systems, power installations, &c., and equipment generally.

With regard to the former, the architects services in organising such matters are very onerous ; and all architects cannot have detailed knowledge of all the work comprised in the second class, although many may have specialised in certain branches of each class in addition to their general architectural knowledge.

With regard to the first class, such work is a modern development of building construction and is so essentially a matter for an architect's personal attention, that his knowledge should be much more than superficial ; and he should have given such matters as much study as if he proposed actually to undertake the work. The architect in these days must be a capable organiser, but there must be no danger of his degenerating into an organiser solely.

It is specialist work of the first class, that the Concrete Institute is strongly of opinion should not be the subject of competition in design ; and I would urge it for the further reason, that inefficient design in constructional work can scarcely be detected until after the building is handed over or when an actual case of failure occurs ; and even if it is discovered by testing or otherwise, the defect cannot be remedied without great expenditure and loss to one or more of the contracting parties. A failure will in any event cause extreme inconvenience and almost certain damage to the client and possibly bring great discredit upon the architect.

It is not sufficient for an architect to safeguard his client by merely drawing up agreements, &c. ; he should be able to, and should actually, satisfy himself that the specialist's work is, in the circumstances, in every way suitable.

It is not possible to draw up a form of appointment for the specialist, which is applicable to all the varying conditions under which he is employed, but the following points should be borne in mind as to his duties: —

(1) He should prepare all plans, calculations, instructions and quantities necessary in the opinion of the architect, and these particulars should be sufficient and adequate, and should be based on the architect's instructions.

(2) He should be responsible for the accuracy and efficiency of his designs, and for the strength and efficiency of the work carried out to his designs.

(3) He should carry out his work with due diligence.

(4) He should obtain the architect's approval for the whole of his work, such approval not to relieve him of his responsibility.

(5) He should be cognisant of and comply in all respects with the requirements and regulations of local authorities and other bodies under whose jurisdiction the work is to be carried out.

(6) He should undertake not to divulge any particulars or information furnished by the architect, or to publish particulars of the work in the Press or otherwise, without the express sanction of the architect.

(7) He should relieve the client and the architect from responsibility and cost in connection with the infringement of patents, and he should accept all liability in connection with the work executed to his designs.

(8) He should be prepared to visit the work during progress and after completion, and to make all necessary tests and give written reports from time to time as the architect may require as to the manner in which the work is being carried out.

On the subject of second class, a specialist's work applied to or installed in the finished structures, there is need for more intimate working between the architect and specialist so that the building is best adapted for the machine, or fittings installed. Speaking as an architect, I have found great difficulty in getting mechanical engineers to decide where they want to place their shafting and machinery, and I have often had to stop them cutting through essential structural members in the building.

EXHIBITIONS OF THE WEEK:

English Woods and Gardens at the Greatorex Galleries ; Etchings by James McBey at Messrs. Colnaghi's.

IN our last week's notice we were obliged to hold over our account of the very attractive collection of water-colour drawings by Frances Drummond at the Greatorex Galleries. Miss Drummond calls these "Gardens, Wood and Field," and we, in our headline, in referring to English gardens, include Irish, as three among the most charming of these drawings are from Howth Castle, Dublin Co., and from Mount Usher in County Wicklow. Still, this little group of water-colour drawings is mainly of English scenes, and gives something of the wonderful vernal freshness of English woodlands, starred with primroses and bluebells, and of English gardens, clad in the rich robes of their July glory. Miss Drummond has evidently the feeling for colour, and her colour, if rich and brilliant, is also well harmonised. The drawing is good, especially in such scenes as "A Roadside Pond" and "On the Cliffs near Lyme Regis" ; though in other drawings there is a lack of atmosphere, and the artist has a curious habit or trick of slurring the drawing of her flowers. This is quite correct in perspective, but it is obvious that the detail of the flowers near the spectator would be more clear than those in the middle distance. On the contrary, they are here in several instances—as in "St. John's College Gardens," in "Howth Castle" and "The Botanic Gardens at Dublin"—exactly the same, with the necessary result that distance is lost because the near foreground lacks accentuation.

We have in recent years treated in some detail the question of garden decoration—of dials, garden statues, lily ponds and fountains ; and these drawings in such subjects as a "Rose Garden," "Lily Pond, Foots Cray," "The Fountain of Mount Usher," and an "Irish Garden" form a delightful coloured illustration to this fascinating theme. Their outlook is straightforward, and lacks any imaginative grasp of a subject which has its poetic side ; but this comes to the artist sometimes, as in "A Roadside Pond," with its sense of mystery, in the "Cliffs of Lyme Regis," with the blue sea seen through the flower-strewn woods, and above all in "The Edge of the Wood," which seems to invite us into the shadowy woodland.

Mr. James McBey has come well forward during the war, and we have already noticed his work in the Leicester Galleries. The etchings now exhibited at Messrs. Colnaghi's Galleries include his studies of Morocco and some of his etchings in France, among which is that finely conceived scene of the graves of French soldiers, "Français Inconnus." There is something of Africa which lingers in the old Spanish cities, and thus Mr. McBey's studies of the old Moorish bridges of Toledo, the grand sweep of the Alcantara and the bridge of S. Martino, harmonise with his etchings of Tetuan and Tangier.

The torpedoed *Sussex* brings us back to the crimes and tragedies of the war, and suggests what a fine subject this would offer to colour ; while "1588" shows in two states of the plate, with an interesting variation, a great Armada galleon swept relentlessly on the expectant rocks. Perhaps the finest of the series are "Night in Ely Cathedral," with the vast columns immersed in deep shadow, and "Penzance," where the atmospheric effect is admirable. An interesting little collection, which does not, as we believe, represent the high-water mark of an artist from whom even better things are to be expected.

RAILWAY, CANAL AND ROAD.

THE Select Committee on Transport, which has just issued its second Report, has considered the question as it affects railways, canals, and transport by road. The Committee has come to the following preliminary conclusions :—

(1) That the organisation of the transport agencies of the country—and particularly of the railways—cannot be allowed to return to its pre-war position.

(2) That the temporary arrangements for the control of railways and canals during the war would not be satisfactory as a permanent settlement.

(3) That unification of the railway system is desirable under suitable safeguards, whether the ownership be in public or private hands.

Any one of the following courses would be consistent with the conclusions reached, but without further evidence the Committee is not in a position to recommend which of these methods should be adopted in the first instance :—

(1) Further amalgamations of railway companies as a step towards unification.

(2) Unification accompanied by private ownership and commercial management.

(3) Unification by means of nationalisation followed by :—

(*a*) Establishment of a Government Department to manage the railways.

(*b*) Constitution of a Board of Management not directly represented in Parliament.

(*c*) Leasing of the system to one or more commercial companies.

The Committee has examined the proposals of Mr. A. W. Gattie for improving the methods of handling goods and traffic by the use of his systems and inventions. The proposals are described in the Report as attractive and the inventions as highly ingenious, but the Committee is not able, on the evidence presented to it, to come to any conclusion with regard to the practical value of the proposals or to make any recommendation in regard to their adoption. A recommendation is made, however, that Mr. Gattie's company should be given permission by the Treasury New Issues Committee to raise funds for the purpose of enabling mechanical tests to be carried out, and that such priorities should be granted as may be necessary to allow the machinery and appliances to be obtained as soon as possible.

With regard to the 4,670 miles of canals and navigations in the United Kingdom, the Committee states that 1,360 miles, owned or controlled by railway companies, have been managed during the war by the Railway Executive Committee. The arrangements made for the working of the canals have been of great public value and have relieved the railways of a considerable volume of heavy traffic, but in the absence of further evidence it desired to take the Committee has not been able to come to any conclusion as to the most advantageous organisation for dealing with the canals, except that further amalgamation would be advantageous.

The Committee does not consider that road transport generally is susceptible of being organised to an extent comparable with that which may be reached in connection with transport by railways and canals, but believes that there is much useful work to be done. It recommends that endeavour should be made by the Government, when peace is restored, to reap for the community some of the fruits of the educational work of the Road Transport Committee, by promoting voluntary co-operation between owners and users of road transport. It realises, however, that measures which are suitable to present circumstances may not be equally applicable to peace conditions, and that other considerations may justify, from a trader's or agriculturist's point of view, what from the community's point of view may be an uneconomical use of road transport.

National Gallery, Trafalgar Square

The Exhibition of works acquired by the Trustees during the last four years, and therefore for the most part unseen hitherto, was opened to the public on the 5th inst.

LAW REPORTS.

OFFICIAL REFEREE'S COURT.
(Before MR. MUIR MACKENZIE.)

Dilapidations Claim.

Konig v. Wood.

THE plaintiff in this action, Mr. Fredk. A. Konig, of Tillingham, Newport Pagnall, Bucks, claimed from Miss Wood damages for breach of covenant to regain Tillingham Cottage, Bucks, which she, with Miss MacFarren, had occupied on lease.

According to Counsel's statement the plaintiff, who is a naturalised American, in 1907 bought the Tillingham estate, comprising about 3,000 acres. Prior to taking up his residence at the mansion house he went to live at the farmhouse, the name of which was afterwards changed to Tillingham Cottage, the subject of the action. In 1908 he moved to the mansion house, and in 1910 an agreement was entered into with Miss Wood and Miss MacFarren, under which they took the cottage with three acres of land for a period of 21 years, at a rental of £90 per annum for the house and £2 per acre for the land, the plaintiff agreeing to pay £60 towards certain alterations and repairs. For this purpose, by arrangement the ladies employed their own architect and undertook the work, which actually cost £317. The work was completed in 1911, and in 1912 the lease under which the claim arose was executed. By that lease tenancy was created for 21 years, from 1910 at a rental of £130 17s., made up by the initial rent of £90 and a percentage on the cost of converting the stables into a living house for a coachman and wife and the erection of a fence. The arrangement was that 5 per cent. of the outlay should be charged by the landlord as rent. The tenants further took ten acres of land instead of three. Power was reserved by the lease to determine at the end of seven years, and this the tenants availed themselves of, and ceased to occupy in March, 1917.

The plaintiff, giving evidence, said that he lived at Tillingham House, Newport Pagnall, and carried on business in London. When he bought the Tillingham Estate he lived at the Cottage while the mansion house was being put in order. When he let the cottage, by arrangement the tenants carried out the necessary work, but he found the money to the extent of about £317. The doors, stairs, and ceilings were of natural pitch-pine, but Miss Wood did not like the plain pine ceilings, and she was allowed to paint them. When the defendants left, the premises were in a bad state of repair and the kitchen garden was in a dilapidated condition.

In cross-examination plaintiff said that he was on friendly terms with the ladies while they lived at the cottage, and from time to time had congratulated them upon the improvements they had made in the premises. Apart from the covenants of the lease he admitted that they had kept the house very well and had made improvements. He claimed £306, but had not yet spent a penny on the repairs as he was trying to let the property, which his agents had described as being in a "first-class condition of repair." He admitted that he had asked the ladies to make a money payment instead of doing the repairs.

Mr. Harry A. Glover, of Messrs. Trollope & Co., proved having made a survey of the premises and produced a schedule of repairs which it was claimed were necessary to comply with the terms of the lease.

Many witnesses were called and the hearing of the evidence occupied several days.

The Referee in giving judgment, said that the plaintiff claimed £316 as the cost of making good the premises in accordance with the terms of the lease and the defendants had paid into Court £185 10s., and did not ask for the return of any part of that amount claimed for repairs that was added to by a claim of £16 7s. for loss of user, and the amount in dispute was therefore £148 5s. There could be no question as to the obligations of the defendants to repair and paint and paper during the last year of the tenancy, but that obligation had not been fulfilled; nor had the covenant to brick up the partition wall which had been taken down been complied with. He found that the failure of the defendants arose from no desire to shirk their liability, and that they had been prevented from carrying out their obligation by the difficulty in getting work done. One item in the claim involved a question of principle, and that was the replacing of a post and rail fence which the defendants had removed. Although it was put up by the defendants it was a fixture which was removable, but in the present case the tenant had undertaken to deliver up all additions and fixtures. Miss Wood however was told by defendant's agent that she might remove the fence, and that, in his opinion, amounted to a licence which operated to prevent the plaintiff claiming for the fence. As to the claim for loss of user, he said that the defendants were ready and anxious to do all the necessary decorative work, but were delayed by circumstances beyond their control and plaintiff refused to grant an extension of time. No repairs, however, had since been done by the landlord. Plaintiff could have had the whole of the premises restored to him at the expiration of a fortnight from the expiration of the term and was entitled to only 14 days' rent which amounted to £7. He allowed the plaintiff, including that £7, the sum of £182, and the defendant having paid a larger sum into Court there would be judgment for the defendants with costs.

The London Electric Railway.
Compulsory Acquisition of Westminster Property.

At the Surveyors' Institution, Mr. H. F. Lofts, F.S.I., as arbitrator, heard a claim against the London Electric Railway Company for £3,209 16s., as purchase money and compensation in respect of the compulsory acquisition of certain land in the district of the Broadway, Westminster, under Parliamentary powers. The claimants were Mr. H. C. Wheeler (the freeholder) and his mother, Mrs. Caroline Jessie Wheeler, who was tenant for life.

Mr. Herbert Jacobs, counsel for claimants, said the property was known as 16, St. Ermin's-hill, and 5 and 6, Maundy-place, and formed one connected site. The total agreed area was 2,052 superficial feet, of which 320 feet were subject to certain restrictions appearing in a conveyance by the Metropolitan District Railway Company to Mr. S. R. Wheeler, the father of the freeholder. The remainder of the property was subject to ordinary restrictions as to light. The property was untouched by the extensive development which had taken place all round it. It was almost an island in the midst of fully-developed buildings. Counsel argued that weight should be attached to the fact that an offer for the site was made by the proprietors of St. Ermin's Hotel (which was close by) some years ago, and that the presence of this hotel and its special needs should be borne in mind in arriving at the market value of the land.

Mr. H. C. Wheeler, the freeholder, said that in 1897 he refused an offer of £5,000 for the freehold of the property, which was made to him by Mr. Flood, acting on behalf of the Mansions Proprietary Company, who owned St. Ermin's Hotel. Subsequently, he was offered £5,000 by Mr. Richardson, the managing director of the company, which he also refused. At the time he told Mr. Richardson there was a passage-way that could not be built over.

Mr. Frank C. N. Flood, surveyor and estate agent, gave evidence as to making the offer of £5,000. In February, 1898, the whole matter was dropped, as Mr. Wheeler would not reduce his price below £6,500.

Mr. W. H. Mills, surveyor, Westminster, valued the area of the site which was not subject to any restrictions, namely, 1,732 feet at 30s. per foot, which amounted to £2,598. He valued the restricted area of 320 feet at £1 per foot, or £320, making a total of £2,918. He added the usual 10 per cent. for compulsory sale, equal to £291 16s., making a total of £3,209 16s. as the purchase money and compensation payable.

Mr. H. M. Rogers, surveyor, of Belgrave-road, S.W., submitted a valuation of a like amount.

Mr. H. W. Liversidge, counsel for the Electric Railway Company, said there were three more or less tumble-down houses on the site, which was subject to restrictive covenants, which, he suggested, made its development extremely difficult. The value the arbitrator had to assess was the value it was worth to the claimants at the time the notice to treat was served, namely, in January, 1916. It was impossible to deal with the land as part of a larger site. It practically had not got a single frontage that was not affected by claims for light, and the restrictions were of a serious character.

Mr. Samuel Walker, surveyor, of Moorgate-street, E.C., gave evidence for the Railway Company. He valued 1,732 feet at 15s. per foot super, or £1,299; and 320 feet, which were subject to restrictions, at 10s. per foot, or £160, making a total of £1,459. He added 10 per cent. for compulsory purchase, making the amount payable £1,604.

Sir Alexander Stenning, surveyor and architect, of Cannon-street, E.C., said the land in question was of awkward and irregular shape and shut in by higher buildings all round. He had heard about this being part of an island site, but it was the back part. As regarded the piece of land to which the restrictions applied, they could only put up a building equal to the present three stories, and in modern building that would mean a basement, ground floor, and first floor. He had valued the whole site of 2,052 feet at 15s. per foot, or £1,539, and had added 10 per cent. for compulsory purchase, making a total of £1,692.

The arbitrator, who reserved his decision, has since awarded the sum of £2,458 on the claim for £3,209 16s. for the land.

It appeared that Mr. H. C. Wheeler carried on a coal and wheelwright's business on the property, and a claim by him in respect of this trade had been agreed at £500. At the request of the parties the arbitrator added this amount to his award, the total of which was thus £2,958.

Claim of Light through a Door.

A new claim to the prescriptive right to light was put forward in the recent case *Lovet v.* Gas Light and Coke Company (*Weekly Notes*, November 9). The plaintiff was the lessee and occupier of a workshop in Horseferry Road, the premises being situated on the east side of a passage or footway 5½ ft. wide between Horseferry road and St Peter's street. The defendants were owners of premises on the west side of the passage, and they had acquired other premises on the plaintiff's side of the passage, and had erected a bridge across the passage connecting the two sets of premises. The plaintiff contended that this bridge obstructed the access of light to which he claimed a prescriptive right to three windows and a door on the ground floor and a window and a landing doorway on the first floor.

The Court found that there was no obstruction of light except to a small window on the ground floor and the doorways on both floors. The Court assessed the damages as regards the obstruction of light to the small window at £15, but held that no prescriptive right to light through the doors could be claimed. The learned Judge said that, so far as reported decisions went, this was the first occasion on which such a contention had been put forward.

Section 3 of the Prescription Act 2 and 3 William IV, c. 71, speaks of 'the access and use of light," and it is obvious that the primary use of a door is not to admit light. The evidence in the case was that the doors were frequently left open to admit light, and there can be little doubt that in some circumstances the loss of light to a doorway would in fact be a serious detriment to premises, but, of course, the Prescription Act has to be construed strictly according to its terms.

Apparently in this case the doors were solid doors and not glazed in the upper portion. Had they been thus glazed there is authority for stating they would have been treated as affording access to light (See Bullers *v.* Dickinson, 29 Ch. Div. 155).

THE BUILDING TRADE.

MATERIALS FOR INDUSTRY.

DR. ADDISON, the Minister of Reconstruction, on the advice of the Standing Council on Post-War Priority, desires to make it known that the position as regards the supply of materials to manufacturers is such that domestic control can now be considerably relaxed. Orders have already been issued, enabling manufacturers and others to utilise for their ordinary civil trade existing stocks of a number of raw materials hitherto controlled, and the ration of material allowed to trades for peace work has, in many instances, been largely increased. Restrictions on imports and exports have already been relaxed in certain directions, and further concessions of a more comprehensive character are in contemplation.

As a result of these measures the producing capacity of the country which has been devoted almost exclusively to the manufacture of war materials will, from now onwards, gradually be released for peace industries. It is, however, of the first importance in the national interest that, when set free, producing capacity should be utilised in such a manner as to provide for the re-establishment, at the earliest possible moment, of the industries and shipping of the United Kingdom, in order to secure the maximum of employment and output.

It is imperative, also, that adequate provision should be made for the full discharge of the obligations of this country to its Allies, particularly in regard to reconstruction of their devastated areas.

It is desired that control by the Government of the normal relations of industry should be brought to an end. This, however, can only be done if manufacturers and traders will endeavour, during the period of reconstruction, to regulate their order of production and distribution in accordance with the national needs and obligations. Even in that event it may be necessary, owing to the shortage of materials, or to other reasons, to maintain priority regulations in a limited number of cases. In the meantime the Order as to Priority, of March 8, 1917, will remain in operation, but its application will, it may be hoped, steadily diminish.

The following list indicates, in a general way, the classes of work to which materials and producing capacity set free from war work should so far as possible, be devoted in the immediate future. This list is not to be taken as complete, nor as indicating any order of precedence.

Maintenance, repair, and replacement of existing machinery and plant in the United Kingdom.

Maintenance, repairs, and renewals for railways, tramways, canals, roads, harbours, and docks in the United Kingdom.

Manufacture of agricultural, milling, food-producing, mining, and textile machinery, machine tools, building materials, equipment used in the public utility services in the United Kingdom.

Manufacture of approved orders placed by the Governments of the United Kingdom, the Dominions and Allies.

Manufacture of goods for export (subject to such Government regulations of export as may from time to time be found necessary).

The Departments responsible for the control of supplies during the war will continue for the time being to exercise such control as may be necessary, and applications for priority permits, export and import licences, and other similar facilities, in so far as they are still required, should be forwarded to the same Department as hitherto. The procedure in connection with such applications is under review, and it is hoped shortly to announce a simplification of the arrangements. Applications should not be addressed to the Ministry of Reconstruction, or to the Standing Council on Post-War Priority. The Standing Council is in close touch with the Departments concerned, and it has arranged that applications shall receive as sympathetic consideration as the altered circumstances permit, but it is unable itself to deal with such applications.

THE LIGHTING OF MUNITION WORKS.

WE learn from a recent issue of the *Board of Trade Journal* that the great munition works of Coventry and Birmingham have been obtaining remarkable results in fuel and light economy. Saving, to help minimise the effects of the great coal shortage, is worked on system, and much ingenuity is shown in perfecting works arrangements. The magnitude of their fuel and light requirements has startled experts. In one establishment, typical of a score, the consumption was 200,000,000 cubic feet of gas—equal to 18,000 tons of coal—per annum and 13,000,000, units of electricity, or about four times the electric consumption of Watford with its 50,000 inhabitants.

A well-known expert, who has completed an investigation for the Coal Controller, finds that the conditions in Coventry and Birmingham are much better than in London, where, however, preventable waste is for the most part confined to the smaller and less well organised establishments. In individual works the leakage may appear small, but in the aggregate it represents an enormous waste of coal which in the national interest must be abated. To secure this end the co-operation of the workpeople is essential, and an appeal for their assistance is being made by the Coal Controller.

The means of saving successfully applied in certain Midland works are :—

A careful grading of illumination to suit various classes of work.

Abolition of local lighting for separate machines and the substitution of general lighting with suitable reflectors and larger units, such as the ½ Watt metal filament lamp and mercury vapour lamps.

A systematic patrol of the works to ensure that no unnecessary lights are kept burning.

Appointment of economy engineers whose sole duty is to supervise the operation of plant to secure the most economical results.

Periodic relining of shafting to reduce power consumption.

Burning sawdust in steam boilers. One works saves over 600 tons of coal per annum by this substitution.

Keeping down the temperature of workshops. In one well-known establishment the temperature is fixed at 55 deg. Fahr.

British Reconstruction Commission for Belgium.

It is announced that a British official mission has gone to Belgium to report upon the need for reconstructoin. The whole matter of reconstruction, it is understood, is being dealt with by the Inter-Allied Reconstruction Commission and a special British department known as the Belgian Trade and Reconstruction section of the Department of Overseas Trade. The mission consists of Sir Arthur Steel Maitland, Head of the Department of Overseas Trade; Sir E. Wildbore Smith, chairman of the International Commission; Sir Herbert Llewellyn Smith, of the Board of Trade; Mr. Keynes, of the Treasury; Mr. M. N. Kearnew, Secretary of the International Commission, and an officer-in-charge of the Belgian Reconstruction Commission; Major Pheunis, Belgian delegate; and Major Gunning, American delegate. It will be the business of the mission to make a tour of inspection of the devastated areas, and report on what is wanted.

NOTES FROM THE FOREIGN PRESS.

COATING STEEL CHIMNEYS WITH CONCRETE.

Five steel chimney-stacks at Pittsburg, which had become badly corroded, were recently coated on the outside with reinforced concrete shell at a comparatively small expense. The concreting, says *Engineering News-Record* for Sept. 26, was done with a cement gun operated by a workman on scaffolding. The stacks are 125 ft. high, with a diameter of 12 ft. at the base, tapering to 6 ft. at the top. The concrete coating varies in thickness from 8 in. at the base to 3 in. at the top, the reinforcement being securely fastened to the plates forming the stacks.

RESEARCHES IN CEMENT.

It is admitted, says *Chemiker-Zeitung*, Oct. 5, that since the adoption of blast-furnace slag and other substances for cement we have not a full knowledge of the chemical reactions which take place within that compound. To remove this somewhat dangerous ignorance a Research Committee of the German Cement-makers' Union has been recently formed to carry out the necessary systematic investigations.

NEW PORTLAND CEMENT WORKS IN NORWAY.

Further evidence of Norway's enterprise in taking advantage of present opportunities is afforded by the founding of large cement works at Kjobsnes under the name of the Nordland Portland Cement Company Provision is made for an annual output of 150,000 barrels. The share capital is Kr.4½ million.—*Zeitschrift für angewandte Chemie*, Sept. 6.

SUBSTITUTE FOR CEMENT.

According to the *Kölnische Volkszeitung*, a patent has been granted for a new process for treating ordinary chalk whereby a valuable and cheap substitute for cement is obtained at a small cost. The material sets in water and resists the action of water like cement. Though somewhat inferior to cement in strength, it is very suitable, so it is said, for use in house-building.—*Zeitschrift für angewandte Chemie*, Aug. 27th.

WOOD COATED WITH METAL SUBSTITUTE.

It is reported that important Upper Silesian works have latterly received orders for substitute door fittings required for new factories or in the renovation of old works. The door fittings in question are being made of wood coated with a substitute metal by a special process.—*Schlesische Zeitung*, Oct. 21 m.

GERMANY'S LIME INDUSTRY AND THE WAR.

The German lime industry has been greatly restricted by conditions brought about by the war. The Union of the German Lime Works reports a great falling-off in the supply for artificial manure. The shrinkage has been from 2,121,174 tons of lime and 1,398,184 tons of unburned chalk in 1913 to 816,921 tons and 789,968 tons respectively in 1917. These deliveries did not meet half the demand. The consumption of lime for building purposes has been very small, owing to the prohibition of building and the shortage of coal.—*Zeitschrift für angewandte Chemie*, Aug. 27.

CONTINUATION STUDIES FOR ENGINEERS IN CONCRETE CONSTRUCTION.

Concrete engineering has a bright future opening up before it, says *Beton und Eisen* for Sept. 5. This is recognised by the German Concrete Association, at whose recent general meeting a resolution was put forward recommending the establishing of continuation courses of study for young engineers who have chosen the concrete-building branch of their profession. These extra courses will enable them to link up theory with practice.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Accrington	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/-½§	1/1½§	1/1½§	1/1½§
Altrincham	1/6§	1/6½	1/6§	1/6½	1/6§	1/7½	1/5§	1/2§	1/2§	1/2½§
Ashton-under-Lyne	1/6½	1/6½	1/6½	1/6½	1/6½	1/7½	1/5§	1/2§	1/2§	1/2½§
Barnsley	1/3§	1/2	1/1½§	1/-§	1/1½§	1/3§	1(	1½	11	11
Barrow-in-Furness	1/3½	1/4	1/4	1 3½	1/3½	1/3½	1/3½	1/1	1/1	1/1
Barry	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Bath	1/1	1/1	1/1	1/0½	10/½	1/1	1/-	10½	10½	10½
Bedford	1/1	1/1	1/1	1/1	1/1	1/1	10	10	10	10
Birkenhead	1/6§	1/6§	1/6§	1/6§	1/3½	1/6§	1/6§	1/2½§	1 2½§	1/2½§
Birmingham	1/5½	1/5½	1/5½	1/5½	1/4½	1/5½	1/4½	1/2½	1/2½	1/2½
Bishop Auckland	1/2½	1/2½	1/4	1/2½	1/2½	11½	11	11	11	11
Blackburn	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/1½§	1/1½	1/1½
Blackpool	1/-	1/4	1/4	10½	8½	1/1½‡	10½	8	8	8
Bolton	1/5§	1/5§	1/5§	1/5§	1/5§	1/7§	1/5§	1/-§	1/-§	1/1§
Bournemouth	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Bradford	1/3½	1/3½	1/3	1/3½	1/2½	1/5	1/3	1/1	1/1	1/1
Bridgwater	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Brighton	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11	11	11
Bristol	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Burnley	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/1½§	1/1½§	1/1½§
Burton-on-Trent	1/2	1/2	1/2	1/2	1/2	1/2	1/1½	11½	11½	11½
Bury	1/5§	1/5§	1/6§	1/5§	1/3½§	1/7§	1/5§	1/-§	1/0½§	1/0½§
Cambridge	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	10½	10½	10½
Cardiff	1/3	1/3	1/3	1/3	1/3	1/3½	1/2	1/-	1/-	1/-
Chatham	10½‡‡	11‡‡	1/‡‡	11‡‡	11‡‡	1/‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Chelmsford	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11	11	11	11
Cheltenham	1/0½	1/0½	1/0½	1/½	1/0½	1/0½	1/0½	10½	10½	10½
Chester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/-§	1/-§	1/-§
Chesterfield	1/-	1/2	1/1	11	10	11	1/-	8-8½	8-8½	8-8½
Colchester	11	11½	11½	1/-	11	1/-	9½	8½	8½	8½
Coventry	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/0½	1/0½	1/1
Crewe	1/0½	1/0½	1/3½	1/0½	1/3½	1/2	1/0½	8	8	8
Darlington	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2	1/0½	1/0½	1/1½
Derby	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11
Doncaster	1/-	1/1	1/1	10½	10½	10	1/0½	10½	10½	10½
Dudley	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	10½	10½	10½
Durham	1/2	1/2	1/1½	1/2	1/1½	1/10	1/0½	9	9	9
East Glam. and Mon. Valleys	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Exeter	1/-	1/-	1/-	1/-	1/-	1/0½	11	10	10	10
Folkestone	1/-	1/-	1/-	1/-	1/-	1/-	10	9	9	9
Gloucester	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/-½	1/-½	1/-½
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Guildford	1/1	1/-	1/-	1/1	—	1/1	11½	9½	9½	10
Halifax	1/2½	1/2½	1/3	1/2½	1/2½	1/2½	1/3	11½	11½	11½
Harrogate	1/0½	1/0½	1/-	1/-	1/-	1/2	1/1	10	10	10
Hartlepools	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1 2	1/0½	1/0½	1/0½
Hastings	10	10	10	10	10	10	9	7½	7½	7½
Hereford	1/-½	1/0½	1/-½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Huddersfield	1/3½	1/3½	1/5½	1/1	1/1	1/2	11	10½	10½	10½
Hull	1/5½§	1/5½§	1/5½§	1/5½§	1/5½§	1/5½§	1/3	1/0½	1/0½	1/1½
Ipswich	1/1½	1/1½	1/2	1/2	1/2	1/2½	1/2	1/1½	1/1½	1/2
Lancaster	11½	1/3	1/2	1/1½	1/1½	1/2	1/0	11	11	11
Leamington Spa	1/3½	11½	1/1½	11½	11½	1/1½	1/1½	11	11	11
Leeds	1/3½	1/3½	1/3	1/3	1/3½	1/5	1/3	1/0½	10½	10½
Leicester	1/2	1/2	1/2	1/2	1/2	1/2	1/1	11½	11½	11
Lincoln	1/3½	1/1½	1/3½	1/3½	1/3½	1/3½	1/3	10½	10	10½
Liverpool	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/2½§	1/2½§	1/2½§
Llanelly	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/	1/-	1/-
London	1/5	1/5	1/5	1/5	—	1/5½	1/2½	1/1½	1/1½	1/1½
Loughborough	1/3½§	1/2	1/2	1/3½§	1/3½§	1/2	1/1	1/0½§	11½§	1/0½§
Luton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	11	11	11
Maidstone	1/1	1/1	1/1	10	10	1/1	1/-	10	10	10
Manchester	1/6½	1/6½	1/6§	1/5§	1/7§	1/5§	1/2½	10	10	10
Mansfield	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	8	8	8
Merthyr Tydfil	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Middlesbrough	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1 2	1/0½	1/0½	1/0½
Newcastle-on-Tyne	1/3½	1/3½	1/3½	1/3½	1/2	1/3	1/4§	1/0½	1/0½	1/0½
Newport, Mon.	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Northampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Norwich	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Nottingham	1/4	1/4	1/4	1/½	1/4½	1/4½	1/1	11½	11½	11½
Oldham	1/5	1/5	1/5½	1/5½	1/4	1/7½	1/5½	1/1½§	1/1½§	1/2§
Oxford	1/3½	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Plymouth	1/2	1/2½	1/2	1/2	1/2	1/2	11½¶	1:	11	11
Pontypridd	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	9½
Preston	1/4½	1/4½	1/4	1/3½	1/3	1/4	1/3½	1/0½	1/0½	1/0½
Reading	1/1	1/1	1/1	1/1½	1/2	1/1	11½	11	10½	10½
Rochdale	1/6§	1/6§	1/6§	1/6§	1/4§	1/7§	1/5§	1/1½§	1/1½§	1/2§
Rochester	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	1/1½	9½‡‡	8‡‡	8‡‡	8‡‡
Rugby	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	10½	11½
St. Albans	1/-	1/-	1/2	1/-	1/-	1/-	10½	9	9	9
St. Helen's	1/6	1/6	1/6	1/6	1/6	1/5	1/3	11½	11½	11½
Scarborough	1/1	1/1	1/1	1/1	1/1	1/-	1/1	10	10	10
Sheffield	1/4	1/4	1/4	1/3½	1/3½	—	1/2½	1/0½	1/0½	1/0½
Shrewsbury	8½	1/3	1/3	9½	—	8½	7	11	11	11
Southampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	1/4	1/4½	1/5	1/4	1/4	1/4	1/4	1/-	1/-	1/-
South Shields	1/3½	1/3½	1/3½	1/3½	1/3½	1/6§	1/2	1/0½	1/0½	1/0½
Stockport	1/5§	1/5§	1/5§	1/4§	1/4½§	1/7§	1/5§	1/1	1/1	1/1
Stockton-on-Tees	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/2	1/0½	1/0½	1/0½
Stoke-on-Trent	1/2	1/2½	1/2	1/2	1/2	1/1½	1/1½	11½	11½	11½
Stroud	11½	11½	11½	11½	11½	11½	11	9½	9½	9½
Sunderland	1/3½	1/3½	1/3½	1/3½	1/2	1/1½	1/4§	1/0½	1/0½	1/0½
Swansea	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Taunton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Torquay	1/-	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10
Wakefield	1/2½§	1/3§	1/2½§	1/2½§	1/2½§	1/3§	1/ ½§	11½	11½	11½
Walsall	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11½	11½	11½
Warrington	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½§	1/2½§	1/3§
West Bromwich	1/3½	1/3½	1/3½	1/4	1/3½	1/3	1/1½	1/0½	1/0½	1/0½
Wigan	1/5½§	1/5½§	1/5½§	1/5½§	1/5½	1/5½§	1/5½	1/2½	1/2½	1/2½
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9
Wolverhampton	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/1½	1/0½	1/0½	1/0½
Worcester	1/-	1/-	1/-	1/-	1/-	10	10½	10½	10½	10½
York	1/2½	1/2½	1/2½	1/2½	1/-	1/-	11	11½§	11½§	11½§

The Masons' rate given is for bankers: fixers usually ½d. per hour extra. * War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 6s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include the 12½ per cent. bonus. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—ED.]

IRON AND STEEL PRICES.

The Minister of Munitions gives notice that he is fixing *export* prices of pig-iron applicable to all exports of pig-iron, on and after December 2, until further notice.

The existing maximum prices of pig-iron for home delivery remain in force until further notice.

The Minister of Munitions also gives notice that he is fixing new maximum prices of *steel* for delivery in the United Kingdom, on and after February 1, 1919. Until that date the existing maximum prices remain in force.

He is fixing *export* prices of bar-iron applicable to all exports of bar-iron on and after December 2, 1918, until further notice.

During the war, while the Government was practically the sole purchaser of iron and steel products, the Ministry of Munitions adopted the policy of stabilising prices in the iron and steel industries by paying direct to the makers certain increased costs due to war conditions. Now that the Government is no longer the sole purchaser, it is desirable to place the industry on an economic basis as early as possible, but the great increase in prices, which would result from an immediate withdrawal of all subsidies, would seriously prejudice the resumption of ordinary commercial work and induce dislocation not only in the iron and steel trades, but in the wide field of engineering and other activities dependent on iron and steel.

The Government has, therefore, decided to remove the subsidies in two stages. Those applicable to steel-making will be removed on January 31, 1919, when a revised schedule of maximum prices for steel will take effect. Those applicable to pig-iron will continue to April 30, when it is proposed that all subsidies should cease entirely. This will involve a further re-adjustment of steel prices, but post-war conditions are not yet sufficiently stable to warrant the fixing of prices after that date.

Arrangements have been made in consultation with the trades concerned to secure an equitable distribution of pig-iron and steel so long as any subsidies continue. The powers possessed by the Government under the Defence of the Realm Act, will, if necessary, be exercised to prevent any undue holding of subsidised material.

It is not, however, intended that Government subsidies should be used to enable exports to be made to overseas markets at less than the full cost. The Ministry have, therefore, issued lists of export prices for both iron and steel, calculated to include the full amount of the subsidies. The Government will levy as a drawback on exported iron and steel the difference between the home and export prices.

RELEASE OF METALS.

A partial withdrawal of the war restrictions on the metal trades is notified by the Ministry of Munitions. The Government are prepared, until existing Orders under the Defence of the Realm Act are withdrawn, to release, without special priority permits, stocks of non-ferrous metals, so far as they are available, for general industrial purposes. Applications should be made to the Controller of Non-Ferrous Materials Supply, Ministry of Munitions, Hotel Victoria, Northumberland-avenue, W.C. 2. No permit is now required for the manufacture or sale of iron and steel wire or wire ropes for the home trade. The Government will continue to issue priority permits for work of special national importance where necessity arises, and firms may still issue priority certificates where the Order as to priority of March 8, 1917, allows them to do so.

A Deceased Architect's Estate.

Mr. Charles John Kohler, of Huish, Littlecommon Bexhill, retired architect and surveyor, who died on June 27, left property of the gross value of £10,165, with net personalty £8,320.

"IRONITE" BRAND CEMENT for FLOORING

(*ENTIRELY BRITISH*)

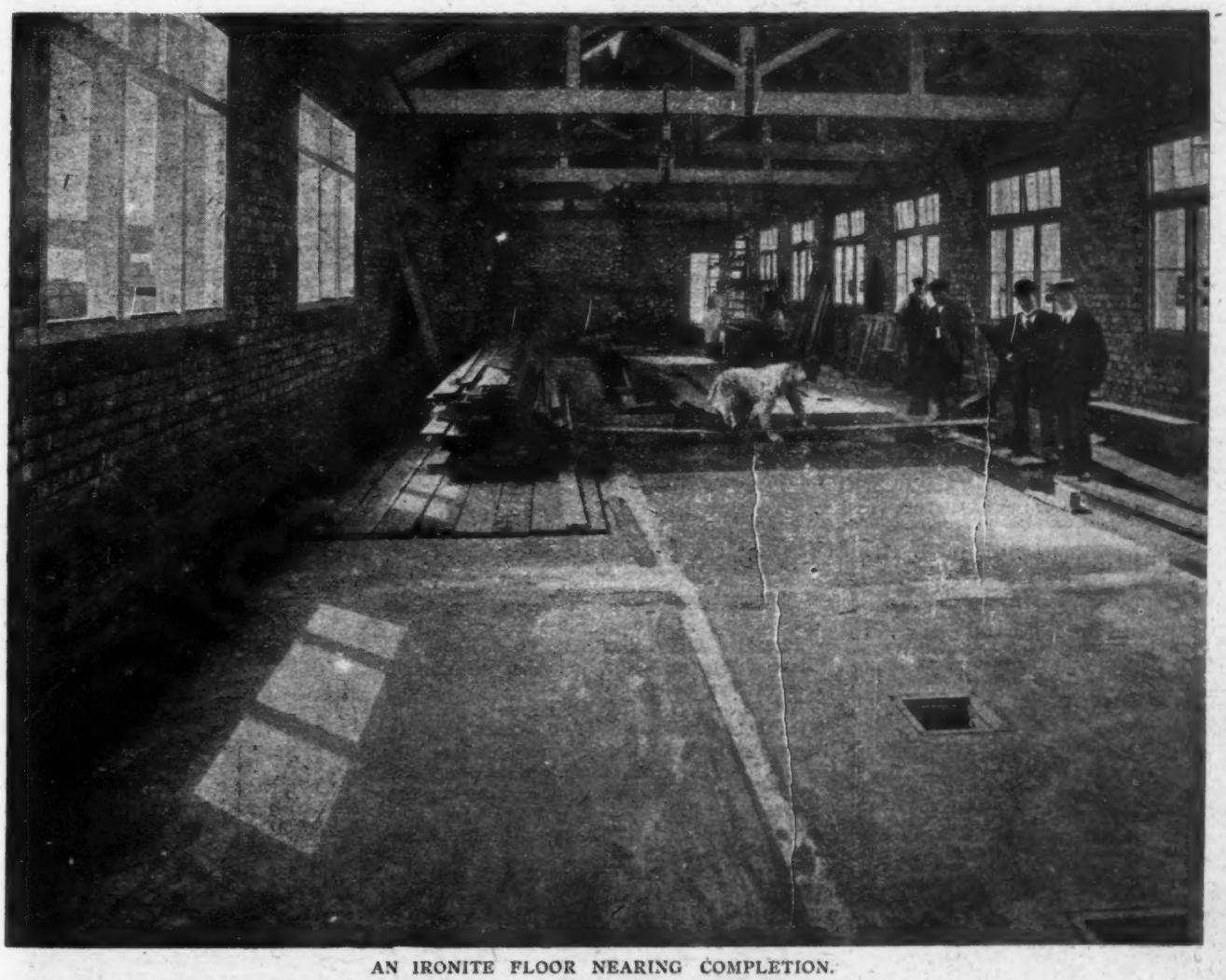
Registered Trade Mark.

Wearproof, Dustproof, Waterproof, Greaseproof.

The Ideal Flooring for **Engineering Works, Machine Shops, Garages, Aircraft Sheds, Dairies, Breweries, Railway Platforms, &c.**

IRONITE AND CEMENT SLURRY FOR COATING & WATERPROOFING WALLS

Applied by brush saves cost of rendering. 1½ million square yards of walls already treated for H.M. Government, &c.



AN IRONITE FLOOR NEARING COMPLETION.

ALSO "IRONITE" BRAND CEMENT FOR WATERPROOFING

Renders *at very low cost* Cement, Bricks, Concrete, Reservoirs, Roofs, etc., absolutely Waterproof and Oilproof against heavy pressure.

Flat Roofs Waterproofed at less than half the cost of Asphalt.

CONTRACTORS TO THE WAR OFFICE, THE ADMIRALTY, AND OTHER GOVERNMENT DEPARTMENTS. FULL PARTICULARS ON APPLICATION.

THE IRONITE COMPANY, LTD.,

Managers: S. THORNELY MOTT & VINES, Ltd.

11 OLD QUEEN STREET, WESTMINSTER, LONDON, S.W. 1.

TELEGRAMS—"THORMOTVIN, VIC., LONDON." TELEPHONE—VICTORIA 5618

SOLE INDIA AGENTS: HEATLY & GRESHAM, Ltd. Calcutta: 6 Waterloo Street. Bombay: 75 Hornby Road.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

BAKEWELL.—It is decided that a cottage hospital shall be erected as a war memorial.

BIDEFORD.—The U.D.C. has decided to ask the engineer for the waterworks scheme to make an early visit to the site to enable plans to be prepared.

BIRMINGHAM.—The Birmingham, Tame and Ree Drainage Board has decided to apply to the L.G.B. for sanction to borrow £50,000 for the extension of the works at Cole Hall.

BLOFIELD.—The R.D.C. is to prepare a scheme for the erection of cottages of which it is stated 143 are required.

BRISTOL.—In their report at the last meeting of the T.C. the Housing Committee expressed the opinion that it was undesirable to embark on a housing scheme at Portishead, or in the vicinity of the shipyard at Portbury. With regard to the general scheme for Bristol, the Committee have entered into provisional contracts for the purchase of about 600 acres of land, and recommended the purchase of an additional six acres at Fishponds. Plans have been submitted to the L.G.B. with the view of ascertaining the extent of the financial assistance which the Government will be prepared to give.

CHELMSFORD.—Plans passed by T.C.:—Etching shop, New-street, for the Hoffmann Manufacturing Co. Ltd.; lavatory accommodation in King Edward's-avenue, for Messrs. J. Brittain Pash, Ltd.

CLEETHORPES.—As a war memorial the U.D.C. has approved a scheme for laying out 14 acres as a recreation ground, with suitable buildings to include gymnasium, swimming bath, concert and lecture hall, public library, and reading-room, and rooms suitable for the headquarters of all organisations interested in the welfare of young folk. The buildings will cost not less than £20,000.

DEREHAM.—It has been decided as a war memorial to erect a screen at the end of the chancel in the parish church, 15 ft. high, with a base of marble. The names of the men who have fallen will be engraved on the panels in gold letters.

DONCASTER.—The T.C. have provisionally approved a scheme for building about 380 houses, probably on the Carr House site. It is also proposed to build on about 20 acres of Corporation land between Common-lane and Woodfield-lane, Balby; and a few houses on other Corporation land, already laid out, adjoining the Warmsworth-road.

DUDLEY.—Plans passed by T.C.: Fodder room, Tansley-hill Farm, Oakham-road, for Mr. J. H. Bean; garage and outbuildings, 15, Wellington-road, for Mr. E. Hill; cinema and cafe, High-street, for Mr. G. H. Downs.

EAST GRINSTEAD.—The R.D.C. has instructed the surveyor to prepare a plan showing suitable sites in the several parishes for the erection of twenty-eight houses

EAST HAM.—Plans passed—Boiler house, 40, Poulett-road, for Mr. W. S. Luton.

GLASGOW.—The T.C. propose carrying out alterations at 13, Schipke-pass at a cost of £650.

HACKNEY.—At a public meeting held at Hackney in support of the local Disabled Soldiers' Foundation, formed to provide 100 bungalows for disabled service men and their families, it was announced that a site of eight acres and a half had been secured in the Walthamstow district. This had been offered to the executive council by Sir Courtnay Warner for a practically nominal amount. Each bungalow will be provided with a large garden, and in addition to the homes there will be a central meeting hall with medicinal baths. The total cost, estimated at £100,000, is to be defrayed by the manufacturers and residents of Hackney.

ILFORD.—Plans passed by U.D.C.: Re-drainage, "Ivydene," Blind-lane, Barkingside, for Mr. H. P. Bolden; offices, &c., at Ilford Component Works, Vicarage-lane, for Messrs. Meister & Jaffes; cloak room, Hainault Works, for Mr. W. T. Walker.

KEIGHLEY.—The R.D.C. has informed the L.G.B. that 24 houses are required in the Parish of Steeton, and 12 in Sutton.

LANGLEY MILL.—It has been decided to erect a carved oak screen in the Parish Church, in honour of the parishioners who have fallen, and to place tablets in the church upon which will be inscribed the names of all who have served from the parish during the war.

LEEDS.—The Developments Committee have under consideration further sites in the city for housing purposes, and members of the Council have inspected two of the localities These consist of an area of about 53 acres adjoining the Stanningley-road, and lying approximately between Bramley and Armley; and about 82 acres of land at Crossgates. Both sites are excellently situated, and the purchase price of each amounts to about £300 an acre. A definite proposal in respect of each site will come before the City Council at its next meeting.

LEYTON.—Plans passed by U.D.C.: Bay window, "Holly Tree" Public House, Dames-road, for Mr. R. Rowe; additions and alterations to sheds and new building, London Electric Wire Co., for Messrs. Higgins & Thomerson; sanitary convenience, 16, Popplerton-road, for Mr. A. G. Barton.

LONDON.—The Veterans' Association is raising a fund of £1,000,000 for purchasing a site, erecting and endowing the necessary buildings for an enlarged Veterans' Club, with at least 1,000 bedrooms.

MILNGAVIE.—It is suggested that the war memorial shall take the form of a children's creche and hospital or a building that could be adapted for either scheme.

MORPETH.—The R.D.C. has decided to prepare a scheme for the housing of its own workmen, and to consult the coal companies and landlords in the district as to their future plans of building.

NOTTINGHAM.—The opinion was expressed at a meeting of the General Hospital Governors that the city and county war memorial should take the form of an extension of the hospital.

PONTYPOOL.—Mr. W. H. V. Bythway has offered the Council certain land, valued at £2,000, for £1,000, for housing purposes and as a memorial to local men who have fallen in the great war.

PRESTATYN.—The U.D.C. has decided to proceed with a town planning and housing scheme.

RAWMARSH.—The Housing Committee of the U.D.C. is submitting a scheme for the erection of 300 houses.

RUNCORN.—The R.D.C. has decided to erect 150 houses at Weston Point, near Runcorn; 100 at Grappenhall, near Warrington; 100 at Helsby; 30 in the Frodsham district; and 30 in adjoining villages.

SELBY.—Plans passed by U.D.C.:—Oil works for the Yorkshire Dyeware and Chemical Co.; timber-drying shed for Messrs. Cochrane & Sons.

SLEAFORD.—From 250 to 300 new houses is the estimate of the R.D.C. as the number which will be required in the Sleaford area.

STEYNING WEST.—The R.D.C. has decided that 60 cottages are required at Lancing.

WALTHAMSTOW.—Plans passed by T.C.: Addition to factory, St. Andrew's-road, for Mr. J. Farrer; sanitary improvements, Station-yard, Boundary-road, for the Midland Railway Co.

FIRES.

BELFAST.—Damage estimated at between £20,000 and £25,000 has been caused by an outbreak of fire at the Belfast shipyard of Messrs. Harsland & Wolff.

BIRMINGHAM.—An extensive fire occurred at the back of 10, Warwick-street last week, the premises of Messrs. Rushton & Stanford, engineers, being severely damaged.

BRADFORD.—Considerable damage was caused by a fire which broke out in the weaving shed of the premises of Downs, Coulter & Co., Ltd., manufacturers, Thornton, Bradford last week.

HALIFAX.—Union Mills, Holmfield, Ovenden, Halifax, occupied by Messrs. Nahums, Ltd., cotton doublers, and a warehouse adjoining, in the occupation of Messrs Smith, Bulmer & Co., Messrs. M. & M. Calvert, worsted spinners, has been destroyed by fire.

NEWCASTLE-ON-TYNE.—Damage amounting to some thousands of pounds has been caused by fire at St. Lawrence Saw Mills, owned by Messrs. John Carr, jun.

TUNBRIDGE WELLS.—On Saturday, the Grey House at Langdon, belonging to Lady Layard, was almost entirely destroyed by fire.

*See also our list of Competitions, Contracts, &c.

PATENTS.

APPLICATIONS PUBLISHED.*

120,245.—J. J. Kermode: Cooking ranges and the like adapted to burn heavy oils as fuel.

120,248.—A. W. M. Rissik and H. G. S. Lorimer: Stoves, lamps, and other heating and illuminating devices.

120,259.—A. Smallwood: Furnaces.

120,269.—W. Lindley: Portable hoisting apparatus for use in mines, tunnels, and the like.

120,286.—J. W. Hurst: Fencing and the like.

120,292.—S. Longmore: Screw cutting tap or boring-tool.

120,318.—C. W. Thomas: Apparatus for casting clay-ware.

120,326.—H. Fairbrother (G. M. Bascom): Cleaning and sharpening device for knives and like articles.

118,850.—P. A. Gandillon: Water-closets.

*** All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.**

The London Association of Master Decorators.

This Association has issued a leaflet giving six reasons why every decorator and member of allied trades should join. Two of the reasons are: "Because the decorating trade is on the eve of the greatest boom ever known. The Bill for the Temporary Regulation of Wages provides that the present rate of wages shall be paid for a period of six months," and because trouble at the end of that time is inevitable, unless both employers and employees are thoroughly organised, and in the meantime have set up Joint Councils who will deal with the subject." Further information can be obtained from Mr. Arthur Seymour Jennings, Organising Secretary.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts—; Competitions—; Public Appointments xxxii; Sales by Auction xxxiv. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender or the names of those willing to submit tenders, may be sent in.

BUILDING AND PAINTING.

DECEMBER 7.—**Leeds.**—BUILDERS' WORK.—Contractors desirous of tendering for the whole of the builders' work, and for the structural steel work required in the erection of extensions to the superstructure of the boiler house, switch rooms, and circulating pump house, at the Leeds Electricity Works, Whitehall-road, Leeds, are invited to send in their names to me, G. W. Atkinson, Architect, 1, Mark-lane, Leeds.

DECEMBER 31.—**Merthyr Tydfil.**—HOUSES.—The Corporation invites tenders for the completion of fourteen houses at Gellifeelog. Particulars from the Borough Architect, Town Hall, Merthyr Tydfil.

NO DATE.—**Sutton-in-Ashfield.**—BUILDING.—Tenders invited for ferro-concrete building, with iron or asbestos roof, erecting at Sutton, near Nottingham, 100 ft. long, 50 ft. wide, 20 ft. high. Applications to Mr. Berridge, Sutton-in-Ashfield, Nottingham.

FURNITURE, MATERIALS, etc.

DECEMBER 9.—**London.**—GRANITE SETTS.—The L.C.C. invites tenders for the supply of granite setts, for use in the Tramways Department, for a period of three and, alternately, six calendar months. Particulars from the General Manager, L.C.C. Tramways, 23, Belvedere-road, Lambeth, S.E. 1.

ENGINEERING, IRON AND STEEL.

NO DATE.—**Bootle.**—LIGHTING.—The Corporation invites schemes and tenders for the supply and erection of a complete street lighting equipment, by means of half-watt lamps, for four miles of tram routes throughout the borough. Particulars of Mr. T. Dawson Clothier, borough electrical engineer, Electricity Works, Bootle.

Auction Sale.

*DECEMBER 12. — **Walton-on-Thames.** — Messrs. Hooker & Webb will sell the timber, materials and fittings of Pitts Towers. On view December 11. Catalogues of Auctioneers, Croydon.

Public Appointment.

*DECEMBER 16.—**East Retford.**—The Town Council of East Retford require the services of a competent architect. Applications, stating qualifications and terms, to be sent to W. Percival Jones, Town Clerk.

TRADE NEWS.

We observe that the rubber trade was represented at the War Savings Week recently held in Edinburgh by the donation of the North British Rubber Company, Limited, of £20,000. No less a sum than £4,516,320 was collected during this special week, a result of which the citizens of Edinburgh have every reason to be proud.

At a meeting held recently of Messrs. The Bell's United Asbestos Co., Ltd., the directors unanimously elected Mr. J. Alfred Fisher chairman of the company, in succession to the late Mr. Herbert A. Bell. Mr. Fisher, who retains his position as joint managing director with Mr. Charles S. Bell, has been connected with the asbestos trade since 1879. Major Kenneth Lightfoot, R.E., has been appointed a director of the company.

Removal of Certain Restrictions on Non-Ferrous Metals.

The Ministry of Munitions in the disposal and allocation of stocks of non-ferrous metals in their possession to consumers will be prepared to pay brokers and recognised intermediaries a commission of ½ per cent. subject to cash payment for the material.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.
Best Stocks 3 3 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	2 7 8	Best Blue Pressed Staffordshire ...	7 18 6
Best Stourbridge Fire bricks	9 5 0	Do. Bullnose ..	8 3 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers ..	17 17 6	D'ble Str'tch'rs	23 7 6
Headers	17 7 6	D'ble Headers	20 7 6
Quoins, Bullnose and 4½in. Flats	21 7 6	One Side and two Ends ..	24 7 6
		Two Sides and one End	25 7 6
		Splays and Squints.....	22 17 6

Second Quality, £1 per 1,000 less than best.
Glazed bricks priced at so much each, 50 per cent. advance on list.
Permission to be obtained from Director of Supplies for Flettons, Wire Cuts, &c.

	s. d.		
Thames Ballast	17 0	per yard,	delivered
Pit Sand	16 0		
Thames Sand	17 0	„ „	2 miles
Best Washed Sand	17 0	„ „	radius
½ in. Shingle for Ferro-Concrete	15 0	„ „	Paddington.

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	3 8 0 ..		3 11 0

Do. £2 16s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 2 2 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube..	2 11½
White basebed, 2d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 10	Closeburn Red Freestone	3 0
Beer in blocks ...	1 9	Red & White Mansfield random block	4 8
Grinshill in blocks	2 6	Yellow Magnesian Limestone do. do	3 9
Darley Dale in blocks	2 10		

YORK STONE, BLUE—*Robin Hood Quality.*
Delivered at any Goods Station London.

	s. d.		
Scappled random blocks	Per Ft. Cube		5 8
6 in. sawn two sides landings to sizes (under 30 ft. super.)	Per Ft. Super		4 6
6 in. rubbed two sides, ditto	„		4 11
3 in. sawn two sides slabs (random sizes)	„		1 11
2 in. to 2½ in. sawn one side slabs (random sizes)	„		1 3
1½ in. to 2 in. ditto, ditto	„		1 1

HARD YORK—
Delivered at any Goods Station London.

Scappled random blocks	Per Ft. Cube	4 9
6 in. sawn two sides landing to sizes (under 40ft. super.)	Per Ft. Super	4 0
6 in. rubbed two sides ditto	„	5 0
in. sawn two sides slabs (random sizes)	„	1 11
2 in. self-faced random flags ..	Per Yard Super	6 0

WOOD.

TIMBER CONTROL ORDER, 1918.

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD

	1st £	2nd £	3rd £	4th £		1st £	2nd £	3rd £	4th £
4 ×11	59	57	55	53	2 × 9	53	51	49	47
4 × 9	56	54	52	50	2 × 8	52	50	48	46
4 × 8	53	51	49	47	2 × 7	52	50	48	46
4 × 7	53	51	49	47	3 × 6	unsorted 47			
2½ & 3×11	58	56	54	51	2½ × 6	unsorted 47			
2½ & 3×9	53	51	49	47	3 × 5	unsorted 46			
3 × 8	52	50	48	46	2½ × 5	unsorted 46			
3 × 7	52	50	48	46	2 × 6	unsorted 47			
2½ & 7/8	52	50	48	46	2 × 5	unsorted 45			
2 ×11	58	56	54	51	2 × 4	unsorted 45			

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.
Boards, 1st and 2nd, £2 10s. extra.
Boards, 3rd and 4th, £1 10s. extra.

WHITE SEA WHITEWOOD.

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £.
3×11	57	55	50	3×8 u/s	48		
3×10	54	52	49	3×7 u/s	48		
3× 9	52	50	48	2½&2× 8 u/s	48		

	£ s. d.		£ s. d.
2½& 2×7 u/s	48 0 0	2½× 5 u/s	46 0 0
3 ×6½ u/s	47 10 0	3 × 5 u/s	46 0 0
2 ×6½ u/s	47 10 0	2 × 5 u/	45 0 0
2½& 3×6 u/s	47 0 0	2 × 4 u/s	45 0 0
2× 6 u/s	47 0 0		

Boards, £1 10s. extra per std.

WOOD (*Continued*).

FEATHER EDGED BOARDS, £50 per std.
SAWN LATHS, 3s. 9d. per bundle.
U/S SLATING BATTENS (yellow and white and strips), £44.
5th ditto, £42.

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.
U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1¼in. P.E. at 71/6	¾in. P.E. at 37/-
1½in. P.E. at 60/-	½in. P.E at 31/-
1in. P.E. at 47/-	¼in. P.E. at 23/-
¾in. P.E. at 41/-	

If tongued and grooved or tongued and grooved and matched, 9d. per square extra.

1in. × 11in P.E at £54	1in. × 9in. P.E. at £51
1in. × 10in. P.E. at £53	1in. × 8in. P.E. at £49

CANADIAN AND AMERICAN YELLOW PINE

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £
3×12 and up	80	69	67	3× 8	62	55	53
3×11	78	63	61	3× 7	60	53	51
3×10	66	58	56	3×4/6.....	58	51	49
3× 9	64	56	54				

For complete specification and controlled prices, see issue of September 6, 1918, page 148.

Dry Wainscot Oak, per ft. super, as inch	0	3	0 ..	—
¾ in. do. do.	0	2	3 ..	—
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as incn	0	3	0 ..	0 4 0
Cuba, Mahogany	0	3	0 ..	0 4 0
Teak (Rangoon, Moulmein or Java), per load.. ..	70	0	0 ..	85 0 0
American Whitewood planks, per ft. cube ..	1	8	0 ..	1 10 0
Scotch Glue, per lb.	0	2	8 ..	—
Liquid Glue, pint	0	3	3 ..	—

SLATES.

Per 1,000 of 1,200 f.o.r. London.

		£ s. d.
Best Blue Bangor Slates,	20 by 10	21 0 0
	16 by 8	10 0 0
First quality „ „	20 by 10	20 0 0
	16 by 8	10 5 0
Best Blue Portmadoc	20 by 10	20 0 0
„ „	16 by 8	10 0 0
First quality „	20 by 10	19 10 0
„ „	16 by 8	9 15 0

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	4 15 0
Ditto hand-made ditto.....	5 0 0
Ornamental ditto	5 2 6
Hip and valley tiles (per dozen)	0 9 0

METALS.

JOISTS, GIRDERS, ANGLES, C.I. COLUMNS, &c.
(Prices controlled by Ministry of Munitions.)

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	31½	35	36½	37½
Water	26½	32½	31½	35
Steam	21½	30	26½	32½
Galvanised Gas ..	8½	27½	12½	30
„ Water	—	25	3½	27½
„ Steam	6½ *on*	22½	2½ *on*	25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d		Bends, stock angles. s. d.		Branches, stock angles s. d.
2 in. per yd. in 6 fts..	4 2	..	3 1	..	3 8
2½ in. „ ..	4 9	..	3 5	..	4 7
3 in. „ ..	5 10	..	3 8	..	5 6
3½ in. „ ..	6 6	..	4 7	..	6 6
4 in. „ ..	7 1	..	5 2	..	7 3

RAIN-WATER PIPES, &c.

	Pipe. s. d.		Bends, stock angles. s. d.		Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	2 9½	..	1 8½	..	2 4½
2½ in, „ „ ..	3 1	..	1 11½	..	2 9½
3 in. „ „ ..	3 8	..	2 6½	..	3 8
3½ in. „ „ ..	4 5	..	3 0	..	4 3½
4 in. „ „ ..	4 10	..	3 6	..	5 3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 7s. 7d. .. 5 in.. 9s. 2d. .. 6 in.. 10s. 9d.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars good merchant quality	17 0 0	..	17 10 0
Staffordshire "Marked Bars"	18 0 0	..	19 0 0
Mild Steel Bars	21 0 0	..	21 10 0
Steel Bars, Ferro-Concrete quality, basis price ..	19 10 0	..	20 0 0
Hoop Iron, basis price ..	20 10 0	..	21 10 0
„ „ Galvanised ..	33 0 0	..	—
Sheet Iron Black—			
Ordinary sizes to 20 g. ..	23 0 0	..	23 10 0
„ „ 24 g. ..	24 0 0	..	24 10 0
„ „ 26 g. ..	25 0 0	..	26 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. ..	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g. ..	36 0 0	..	36 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g. ..	35 10 0	..	—
„ „ 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g. ..	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.....	33 0 0	..	Nominal prices only.
Ordinary sizes, 22 g. and 24 g.....	33 10 0	..	
Ordinary sizes, 26 g.	32 10 0	..	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker.....	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.....	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	29 0 0	..	30 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	51 0 0	..	—
Pipe in coils	51 10 0	..	—
Soil Pipe	54 10 0	..	—
Compo pipe	55 10 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

COPPER—			
Strong Sheet .... per lb.	0	2	3
Thin „ .... „	0	2	4
Copper nails .... „	0	2	3
Copper wire .... „	0	2	4
TIN—English Ingots „	0	3	9
SOLDER—Plumbers' „	0	1	10
Tinmen's..... „	0	2	4
Blowpipe ..... „	0	2	8

Class A certificate required for all Copper, Tin and Solder purchases.

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	7d.	32 oz. fourths	10d.
„ thirds	7½d.	„ thirds	11d.
21 „ fourths	8d.	Fluted, Obscured and Enamelled Sheet,	
„ thirds	8½d.		
26 „ fourths	9d.	15 oz.	7½d.
„ thirds	9½d.	21 „	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	5½d.
¼ Rough rolled and rough cast plate.....	6d.
½ Rough rolled and rough cast plate.....	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	6d.
White Rolled Cathedral.....	6d.
Tinted do.	6½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes.....	per gallon	0 8 0
„ „ „ in barrels	„	0 8 4
„ „ „ in drums	„	0 8 7
Boiled „ „ in barrels	„	0 8 7
„ „ „ in drums	„	0 9 0

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1

Turpentine in barrels	„	0 11 0
„ in drums	„	0 11 3
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		68 0 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots..	per ton delivered	89 10 0
Red Lead, Dry (packages extra) ..	per ton	47 0 0
Best Linseed Oil Putty	per cwt.	1 6 0
Filocol.....	per cwt.	1 0 6
Size. X D Quality.....	fkn.	0 5 6

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 16 0
Pale Copal Oak	0 17 0
Superfine Pale Elastic Oak.....	0 19 0
Fine Extra Hard Church Oak	0 18 0
Superfine Hard-drying Oak, for seats of Churches	1 1 0
Superfine Pale Elastic Carriage	1 1 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal.....	1 5 0
Extra Pale French Oil	1 4 0
Eggshell Flatting.....	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper.....	0 16 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 12 0
Brunswick Black	0 10 0
Berlin Black.....	0 16 0
Knotting	1 10 0
French and Brush Polish	1 0 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

MASTER PAINTERS' FEDERATION.

THE first meeting of the council of the newly formed National Federation of Master Painters was held in the Bradford City Council Chamber recently, when the Deputy Lord Mayor (Mr. W. Barber) extended a welcome on behalf of the city. Earlier in the day the members of the Yorkshire Federation had gathered and agreed to throw in their lot with the national body as now reorganised under trade union regulations.

Mr. Barber, referring to the formation of the Federation, observed that it arose out of an organisation which had been in operation for twenty-three years. They now proposed to work on trade union lines. He was glad to know that employers had realised the benefits of organisation. It was novel, however, that they should have come to realise that the trade union methods were the best. He had always felt that there were rights of the employer as well as rights of the employees. Had that been realised all round many of the unfortunate disputes of the past twenty-five years could have been minimised. He hoped that that new organisation would be a great incentive towards minimising the difficulties that lay in front of them.

The Chairman, Mr. T. Foster, recalled the fact that the organised painting trade was the first to have a standing joint council—and not exactly a Whitley Council, because it was established on those lines before the Whitley Council presented its report. On that joint council it was not so much a question of settling differences as of avoiding differences, and if all operatives were so reasonable as the operatives it was the pleasure of the master painters to meet on that council he was sure labour troubles would be almost unknown. They were looking forward as the council of the new Federation to that meeting being the starting-point of a very successful period in the history of the painting trade. It was a happy augury for the future that they began with practically every section of the trade affiliated.

The council then devoted attention to a long agenda of routine requirements such as the reception of members and the selection of committee. Those chosen for the Executive Committee were: Messrs. S. Moss and H. F. Smith (Yorkshire), J. E. Butterworth and J. H. Cantrell (Manchester), J. H. McDermid (Teesside), J. Whitehead (North-East Lancashire), J. W. Barker (Leicester), J. Brown (Newcastle-on-Tyne), and T. Stride (Portsmouth).

Petrol and Paraffin Prices.

Following upon the reception of two deputations from the Standing Joint Committee of Mechanical Road Transport Associations, Captain F. G. Bristow, the Hon. Secretary has been officially notified that there will be 2d. per gallon reduction in the prices of petrol and paraffin.

NEW COMPANIES.

The particulars quoted below have been compiled by Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C. 2, from the documents available at the Companies Registry.

THE CRICKLEWOOD FOUNDRY COMPANY, LTD. (151,904). Registered November 8, 1918. To carry on the business of metal founders, refiners and manufacturers of metal, engineers, and manufacturers of machinery, &c. Nominal capital £2,000.

J. RICHMOND & SON, LTD. (151,920). Registered November 11, 1918. 165, Hope-street, East Grimsby. To acquire and carry on the business of ironfounders, mechanical engineers, manufacturers of machinery, tool makers, brass founders, &c. Nominal capital £5,000.

ST. ANDREW'S BUILDINGS (WEST), LTD. (151,915). Registered November 9, 1918. 90, St. Andrew's street, Newcastle-upon-Tyne. To acquire lands, buildings, and estates, and turn same to account. Nominal capital £20,000.

WM. THOMLINSON-WALKER, LTD. (151,679). Registered October 11, 1918. To acquire the business of iron, steel and brass founders, electrical and mechanical engineers, whitesmiths, &c., now carried on at Victoria Iron Works, Walmgate, Yorks. Nominal capital, £5,000.

TIMBER HOLDINGS, LTD. (151,916). Registered November 9, 1918. Carpenters-road, Stratford, E. To carry on the business of timber merchants, saw-mill proprietors, timber growers, &c. Nominal capital £100,000 in 100,000 shares of £1 each.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.* ‡ Denotes *recommended for acceptance.*

GLASGOW.—Accepted by Statute Labour Dept. for six months' supplies:—
Thomas Paxton & Co.: Cotton waste.
Blacklock & Macarthur, Ltd.: Paints, &c.
Ivie Hair & Co.: Drysalteries.
M'Creath, Taylor & Co., Jack Bros., Aitken Thomson & Sons: Whin metal chips and blinding.
M'Creath, Taylor & Co.: Whin paving setts.
J. & W. Waldie: Sand.
National Asphalte and Concrete Co.: Asphalte grouting.

ILFORD.—For the supply of granite to the Ilford U.D.C.:—
*W. Griffiths & Sons: 1½ in. Guernsey granite, at £1 3s. per ton; and 1½ in. Griff granite, at 16s. 8d. per ton.

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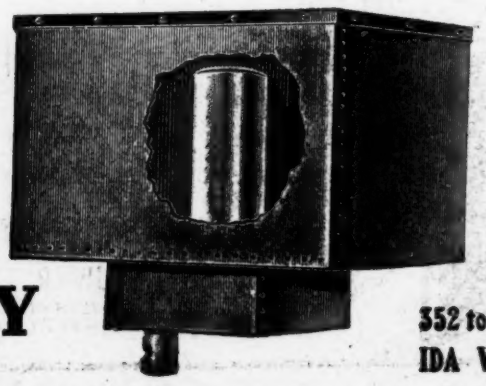
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